Clemson University
3 1604 013 348 877

Digitized by the Internet Archive
in 2013

http://archive.org/details/forestsurveyrele51sout

13.63/7: 51

FOREST SURVEY RELEASE NO. 51 NOVEMBER 1957

FOREST STATISTICS
FOR THE
PIEDMONT OF VIRGINIA, 1957

CLEMSON COLLEGE LIBRARY
DEC 5 1957
AGRI. REF. DEPT.

by

Mackay B. Bryan, Forester

Division of Forest Economics

U. S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Joseph F. Pechanec, Director

in cooperation with the
Virginia
Department of Conservation and Development
Division of Forestry
George W. Dean, State Forester

E

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics, Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

ACKNOWLEDGMENTS

The Southeastern Station received material assistance on the field phase of the Survey and wishes to acknowledge this cooperation. The Virginia Division of Forestry furnished personnel and equipment for one field crew, and the pulp and paper companies listed below contributed funds through Virginia Forests, Inc., to finance a second crew.

Camp Manufacturing Company
Chesapeake Corp. of Virginia
Continental Can Company
P. H. Glatfelter Company
Johns-Manville Products Corp.
Mead Corporation
National Container Corp. of Va.
West Virginia Pulp and Paper Co.

The Division of Forest Economics at the Southeastern Station is under the direction of J. F. McCormack. Collection of field data was supervised by Ronald C. Froelich and aerial photo interpretation was done by W. H. B. Haines. Other staff assistance was as follows:

Field inventory

Thomas R. Bellamy
Hubert H. Broyles
M. H. Goforth
Frank H. Hawley
Philip L. Howard
Davie L. Hunt
Herbert A. Knight
P. F. Lawson, Jr.
Wm. A. McElfresh
Joe P. McClure
Chas. T. O'Keefe
Early G. Page
Robert F. Petracca
Clyde D. Steel

Office compilation

Woodfin Black
Eunice Gamble
Agnes Nichols
Louise Shuford
Sammy Wenningham
Camilla Young

CONTENTS

Page

PRESENT FOREST CONDITIONS AND CHANGES SINCE 1940 - 1

TABLES FOR THE VIRGINIA PIEDMONT, 1957

AREA
1. Gross area by broad use class - 7
2. Ownership of commercial forest land - 8
3. Commercial forest area by forest type and stand-size class - - - - - - - - - - 9

NET VOLUME OF SAWTIMBER (in million board-feet)
4. By species and stand-size class, entire Piedmont - - - - - - - - - - - - - - - 10
5. By species and diameter class, entire Piedmont - - - - - - - - - - - - - - - - 11
5a. By species and diameter class, Northern Piedmont - - - - - - - - - - - - - - - 12
5b. By species and diameter class, Southern Piedmont - - - - - - - - - - - - - - - 13
6. By forest type and stand-size class - 14
7. By species group, log grade, and tree-size class - - - - - - - - - - - - - - - 15

NET VOLUME OF ALL TIMBER (in thousand cords)
8. By species and stand-size class, entire Piedmont - - - - - - - - - - - - - - - 16
9. By species and diameter class, entire Piedmont - - - - - - - - - - - - - - - - 17
9a. By species and diameter class, Northern Piedmont - - - - - - - - - - - - - - - 18
9b. By species and diameter class, Southern Piedmont - - - - - - - - - - - - - - - 19
10. By species and class of material, entire Piedmont - - - - - - - - - - - - - - 20
10a. By species and class of material, Northern Piedmont - - - - - - - - - - - - - 21
10b. By species and class of material, Southern Piedmont - - - - - - - - - - - - - 22
11. By forest type and stand-size class, entire Piedmont - - - - - - - - - - - - - 23
11a. By forest type and stand-size class, Northern Piedmont - - - - - - - - - - - - 24
11b. By forest type and stand-size class, Southern Piedmont - - - - - - - - - - - - 25

NET VOLUME OF ALL TIMBER (in million cubic feet)
12. By species and diameter class - 26
13. By species and class of material - 27

AVERAGE VOLUME PER ACRE
14. Of sawtimber by forest type, species group, and stand-size class - - - - - - 28
15. Of all trees by forest type, species group, and stand-size class - - - - - - 29

GENERAL
16. Number of trees by species group, quality class, and tree size - - - - - - - 30
17. Stocking on commercial forest land by forest type and tree-size class - - - - 31

NET ANNUAL GROWTH
18. By species group and unit of measure - 32
19. Growth percentages by species group and unit of measure - - - - - - - - - - - 32

AVERAGE ANNUAL TIMBER CUT
20. Of sawtimber and growing stock by tree-size class and species group - - - - - 33

NET ANNUAL CHANGE
21. In sawtimber and growing stock volume by species group, entire Piedmont - - - 34
21a. In sawtimber and growing stock volume by species group, Northern Piedmont - - 35
21b. In sawtimber and growing stock volume by species group, Southern Piedmont - - 36
22. In volume per acre by stand size and forest type - - - - - - - - - - - - - - 37

TABLES FOR COUNTIES, 1957

23. County area by broad use class - 38
24. Ownership of commercial forest land - 39
25. Net volume of sawtimber by species group - - - - - - - - - - - - - - - - - - - 40
26. Net volume of sawtimber by broad species group and diameter group - - - - - - 41
27. Net volume of all timber by species group and diameter group - - - - - - - - 42
28. Average annual cut of sawtimber by species group - - - - - - - - - - - - - - - 44
29. Average annual cut of growing stock by species group - - - - - - - - - - - - - 45

DEFINITION OF TERMS - 46

RELIABILITY OF FOREST SURVEY DATA - 50

HOW THE FOREST INVENTORY IS MADE - 52

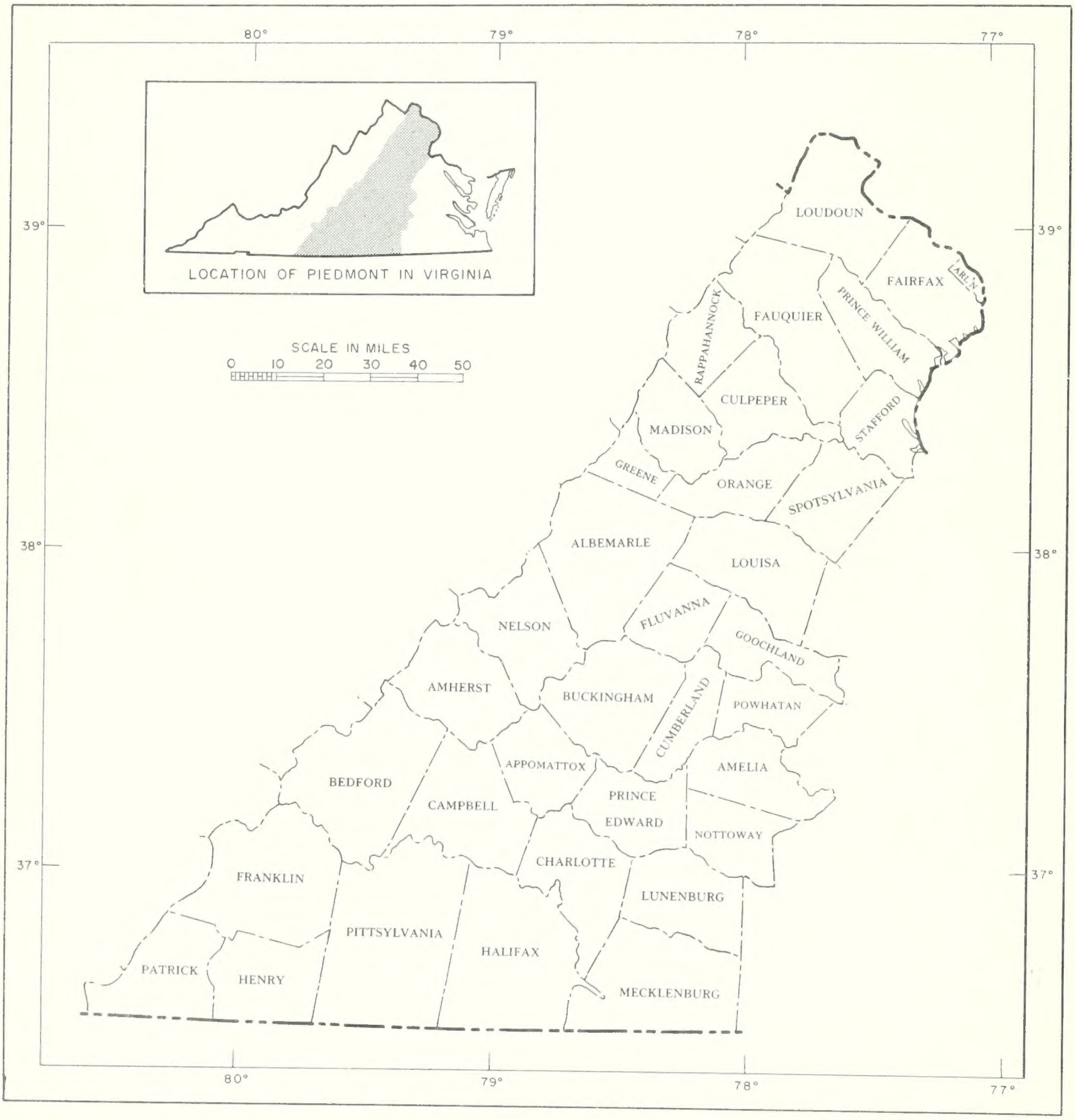


Figure 1.--Counties and independent cities in the Virginia Piedmont.

FOREST STATISTICS FOR THE PIEDMONT OF VIRGINIA, 1957

Piedmont Virginia is a tapering wedge of land slightly more than 10 million acres in extent occupying the central portion of the State between the Coastal Plain in the east and the Blue Ridge in the west (fig. 1). The topography throughout most of the region is rolling, becoming moderately hilly to mountainous on the western edge. The James River divides the Piedmont into northern and southern subregions.

A survey of the forest resources of Virginia was started in the spring of 1956 to obtain current statistics on forest area, timber volume, growth, and amount of timber cut. Work in the Coastal Plain was completed in the fall of 1956 and in the Piedmont early in 1957. This progress report is the second to be issued for the State. Some statistics are shown separately for the Southern Piedmont and Northern Piedmont areas, designated as Survey Units 2 and 3 respectively.

An earlier survey made in 1940 provides a base for determining trends which have had an effect on the forest resource. Comparisons of forest land area and timber volumes which follow are made to point out important changes which have taken place during the 17-year period between surveys.

PRESENT FOREST CONDITIONS AND CHANGES SINCE 1940

More land area in forest.--Forest lands in the Virginia Piedmont have increased about 459,000 acres, or 8 percent, since 1940 (table A). The change is attributed mainly to the reversion of former agricultural lands to forest. Agricultural lands decreased about 565,000 acres, or 14 percent, during the 17-year period. Forest area increased 10 percent in the Southern Piedmont as land in agricultural uses dropped 19 percent. North of the James River forest lands expanded by 5 percent while agricultural lands dropped 10 percent. A small increase in area of large reservoirs accounted for a slight decrease in the combined area of land and small bodies of water.

Expansion of urban areas, suburban development, and construction of highways and defense installations have brought the area in these uses up 58 percent since 1940. This expansion has been greatest in the vicinity of Washington, D. C., but is noticeable throughout the Piedmont.

A shift of 47,000 acres from commercial forest to noncommercial forest is about equally attributed to inclusion of more forest area in public parks and classification of a few steep, rocky areas along the edge of the Blue Ridge as nonproductive forest land. Noncommercial forest area now amounts to a little over 2 percent of the forest area in the Piedmont.

Table A.--Changes in land use, 1940 to 1957

Land-use class	1940	1957	Change	
	Thousand acres	Thousand acres	Thousand acres	Percent
Forest land:	5,932	6,391	+459	+8
Commercial	5,828	6,240	+412	+7
Noncommercial	104	151	+47	+45
Agricultural lands	3,906	3,341	-565	-14
Marsh and small water areas 1/	43	35	-8	-19
Urban and other land areas	186	293	+107	+58
Total	10,067	10,060	-7	0

1/ Includes small bodies of water reported as land by the U. S. Bureau of the Census.

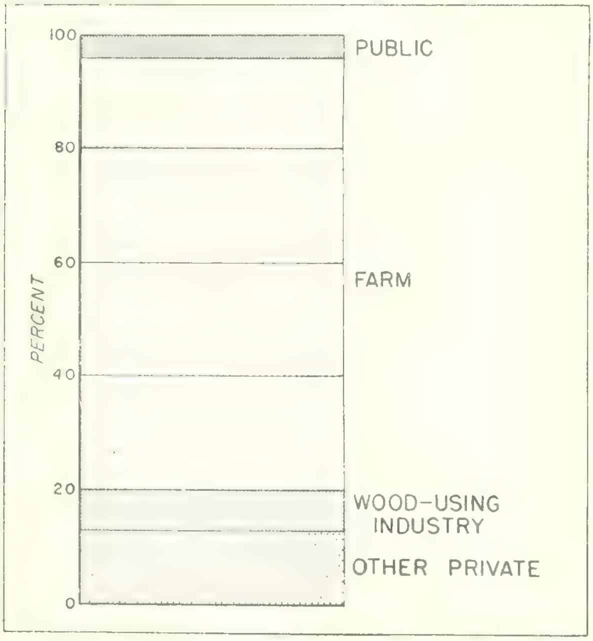


Figure 2.--Commercial forest ownership in the Virginia Piedmont, 1957.

Three-fourths of commercial forest is on farms.--Private farms include 76 percent of the commercial forest area in the Piedmont (fig. 2). Farm ownership data were not collected in the 1940 survey, but Bureau of the Census figures indicate a general decrease in area of farm ownership. Census of Agriculture data for 1939 and 1954 show a decrease of 10.4 percent in total land in farms and a drop of 3.4 percent in farm woodland area.

Commercial forest land in public ownership now makes up about 4 percent of the total for the Piedmont compared to about $2\frac{1}{2}$ percent in 1940. Nearly all of the increase has been in Federal lands obtained for use as defense installations.

Private ownerships other than farms include 1,282,700 acres, or about one-fifth of the commercial forest area in the Piedmont. Only about one-third of this area is owned by wood-using industries. This is the reverse of the situation in the Virginia Coastal Plain where wood-using industries own two-thirds of private forest land not in farms. Private forest land not in farms has increased 17 percent since 1940. This estimate is based on use of 1939 and 1954 Census of Agriculture figures for farm woodland areas and the 1940 and 1957 Forest Survey data for areas in public ownership.

Volume of growing stock per acre of commercial forest land averages about 1,800 board-feet, 745 cubic feet, or 10½ cords. Volume per acre is slightly heavier in the Northern Piedmont than in the Southern Piedmont. Sawtimber volume per acre averages about 2,400 board-feet on public lands, 2,050 on lands owned by wood-using industries, and 1,750 on farm and other private ownerships. Percentage of softwood volume in the stands is highest on public lands with 40 percent, next on wood-using industry lands with 30 percent, and lowest on farm and other private lands with 25 percent.

Upland hardwood type increases nearly one-half million acres.--The only sizable change in area by forest type since 1940 is in the upland hardwood type which increased 461,000 acres, or 17 percent (fig. 3). Combined area of pine and pine-hardwood types shows little change from the 1940 level. Within the pine types a slight shift has developed toward Virginia pine. Its area has increased by 4 percent while the area of loblolly and shortleaf pine types has dropped 8 percent.

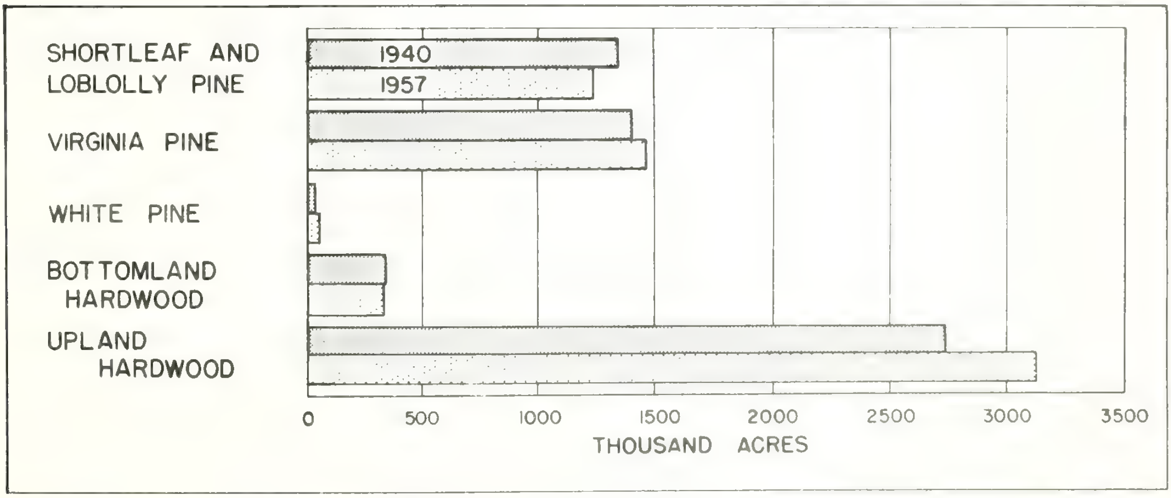


Figure 3.--Comparison of commercial forest area by forest type, 1940 and 1957.

Volume of growing stock up 12 percent.--Total cubic volume in sound trees 5.0 inches d.b.h. or larger is 12 percent above the 1940 level (table B). Pine dropped 11 percent in volume, while hardwoods increased 27 percent. Soft hardwoods and hard hardwoods increased at almost equal rates. Yellow-poplar, which makes up about one-half of the soft hardwood volume, has not kept pace with the increase of the less desirable soft hardwoods. Yellow-poplar growing stock volume has risen 16 percent since 1940.

Table B.--Comparison of volumes in all trees 5.0 inches d.b.h. or larger, 1940 to 1957

Class of material and species group	1940[1]	1957	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	1,578	1,399	-179	-11
Other softwoods	48	53	+5	+10
Soft hardwoods	712	908	+196	+28
Hard hardwoods	1,801	2,294	+493	+27
All species	4,139	4,654	+515	+12
All live trees:				
Softwoods	1,723	1,636	-87	-5
Hardwoods	2,904	3,840	+936	+32
All live trees	4,627	5,476	+849	+18

[1] Original survey volumes have been recomputed to eliminate differences resulting from changes in standards between the two surveys. Thus, the 1940 estimate shown here will not agree with volumes previously published.

A comparison of softwood and hardwood growing stock in 1940 and 1957 by d.b.h. class is shown in figure 4. Softwood volume has dropped considerably in trees 10 inches and larger, while hardwoods show a marked gain in all diameters below 20 inches.

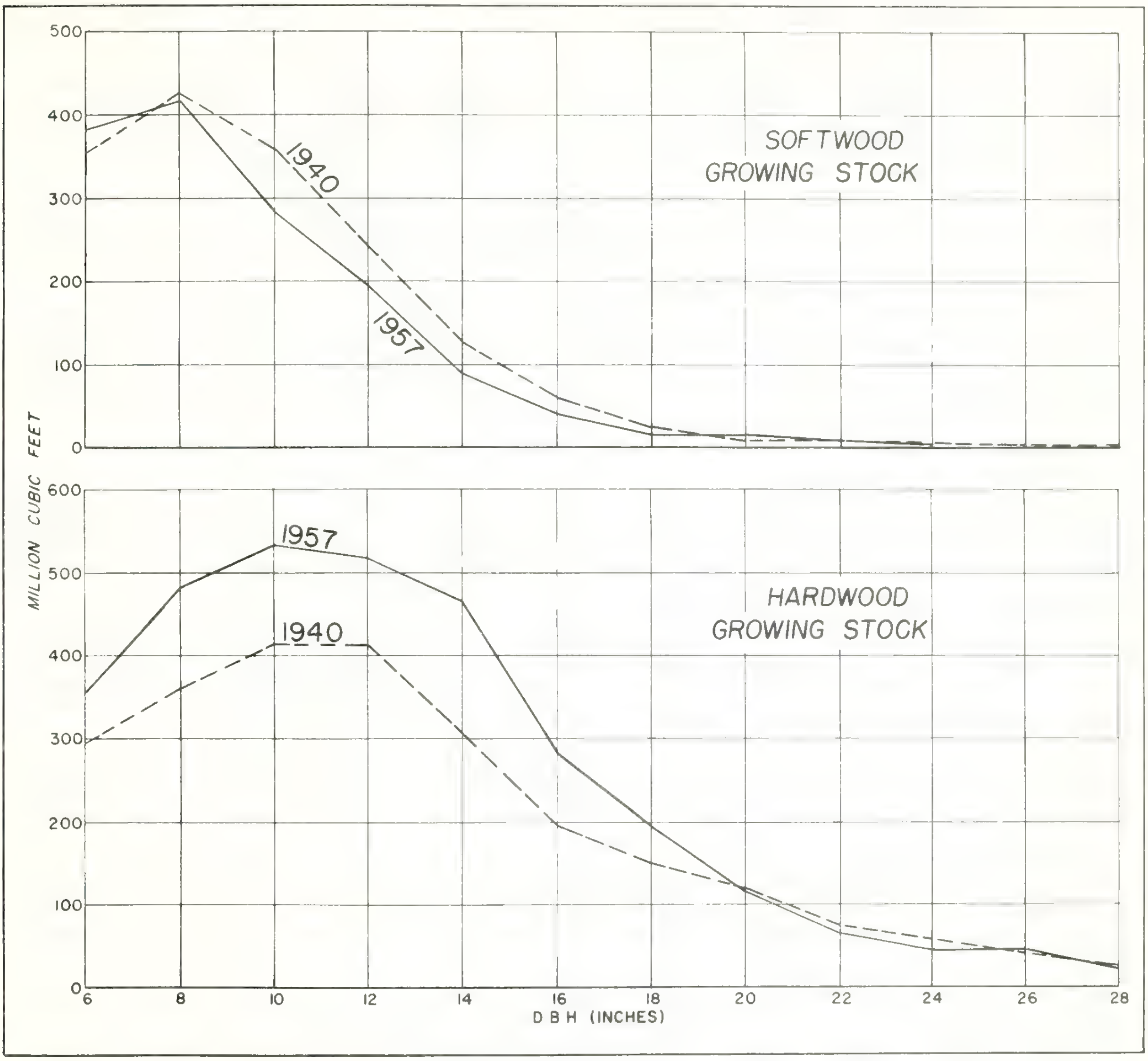


Figure 4.--Comparison of growing stock volume by tree diameter, 1940 and 1957.

The number of sound softwood trees in the 2-inch and 4-inch d.b.h. classes, for which no volume is assigned, has increased 3 percent since 1940, while hardwoods of similar size have increased 24 percent.

Pine sawtimber decreased 25 percent in 17 years.--Board-foot volume of yellow-pine sawtimber is down 25 percent from the 1940 level (table C). Board-foot volume of hardwoods increased 26 percent, making a net increase of 7 percent for all species. The drop in pine sawtimber volume was about the same in both the Northern and Southern Piedmont, but the increase in hardwood volume was about twice as great in the northern subregion as in the southern.

Table C.--Comparison of sawtimber volumes, 1940 and 1957

Species group	1940[1]	1957	Change	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Yellow pines	3,733	2,811	-922	-25
Other softwoods	151	151	0	0
Soft hardwoods	2,060	2,559	+499	+24
Hard hardwoods	4,513	5,712	+1,199	+27
All species	10,457	11,233	+776	+7

[1] See footnote 1, table B.

The oaks, as a group, have made the greatest increase in sawtimber volume, about equaling the drop in yellow-pine (fig. 5). Board-foot volume in yellow pines has changed from slightly higher than that for the oaks in 1940 to less than two-thirds of their volume in 1957. Percentage-wise, the mixed group, including hickory, red maple, sweetgum, blackgum, and other minor species, has made the largest gain, expanding one-third in board-foot volume. The economically important yellow-poplar species increased by a little over 17 percent during the period.

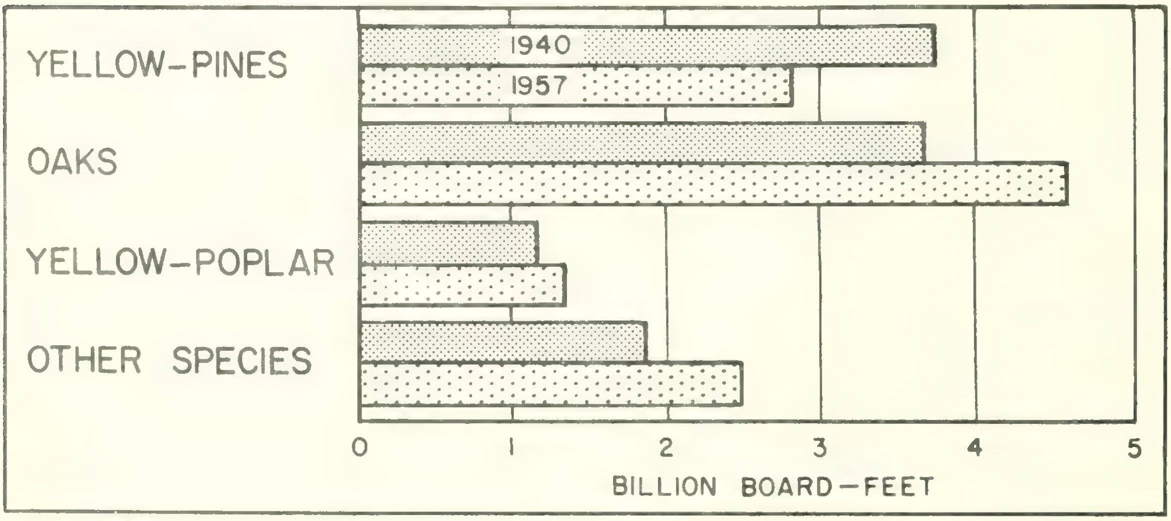


Figure 5.--Comparison of board-foot volumes in major groups of species, 1940 and 1957.

Table 1.--Gross area[1] by broad use class, 1957

Class of use	Entire Piedmont		Northern Piedmont		Southern Piedmont	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Forest land:						
Commercial	6,239.8	61.6	2,492.5	55.9	3,747.3	66.1
Noncommercial:						
Productive-reserved	126.3	1.3	110.3	2.5	16.0	0.3
Unproductive	24.9	0.2	24.2	0.5	0.7	(2/)
Total forest	6,391.0	63.1	2,627.0	58.9	3,764.0	66.4
Nonforest land:						
Agriculture	3,341.1	33.0	1,637.5	36.8	1,703.6	30.0
Urban and other[3]	294.4	2.9	160.7	3.6	133.7	2.4
Total nonforest	3,635.5	35.9	1,798.2	40.4	1,837.3	32.4
Total land area	10,026.5	99.0	4,425.2	99.3	5,601.3	98.8
Total water area[4]	103.4	1.0	32.4	0.7	71.0	1.2
All classes	10,129.9	100.0	4,457.6	100.0	5,672.3	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc., and a small area of marsh.

[4] Includes 70,300 acres of Census water reported in 1950 or created since that date and 33,100 acres of water according to Survey standards but defined by the Bureau of Census as land area.

Table 2.--Ownership of commercial forest land, 1957

Class of ownership	Commercial forest land					
	Entire Piedmont		Northern Piedmont		Southern Piedmont	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Public land:						
National forest	83.3	1.3	66.1	2.7	17.2	0.4
Indian	--	--	--	--	--	--
Other Federal	100.5	1.6	41.1	1.6	59.4	1.6
Total Federal	183.8	2.9	107.2	4.3	76.6	2.0
State	44.7	0.7	1.2	0.1	43.5	1.2
County and municipal	10.8	0.2	3.1	0.1	7.7	0.2
Total public	239.3	3.8	111.5	4.5	127.8	3.4
Private land:						
Farm	4,717.8	75.6	1,771.5	71.1	2,946.3	78.6
Wood-using industries	440.9	7.1	140.5	5.6	300.4	8.0
Other	841.8	13.5	469.0	18.8	372.8	10.0
Total private	6,000.5	96.2	2,381.0	95.5	3,619.5	96.6
All classes	6,239.8	100.0	2,492.5	100.0	3,747.3	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1957

(In thousand acres)

ENTIRE PIEDMONT

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	45.8	48.6	25.3	--	119.7
Shortleaf pine	12.9	254.5	420.9	95.7	--	784.0
Virginia pine	--	171.7	512.9	295.0	4.2	983.8
White pine	8.4	8.4	5.5	--	--	22.3
Total	21.3	480.4	987.9	416.0	4.2	1,909.8
Hardwood types:						
Oak-pine	37.3	202.6	351.8	64.5	4.5	660.7
Oak-hickory[2]	672.7	933.9	1,374.5	312.7	38.9	3,332.7
Oak-gum-cypress	97.8	72.6	112.5	34.7	19.0	336.6
Total	807.8	1,209.1	1,838.8	411.9	62.4	4,330.0
All types	829.1	1,689.5	2,826.7	827.9	66.6	6,239.8
Percent	13.3	27.1	45.3	13.3	1.0	100.0

NORTHERN PIEDMONT

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	3.8	6.8	3.4	--	14.0
Shortleaf pine	--	38.9	100.1	36.9	--	175.9
Virginia pine	--	84.4	199.7	112.2	4.2	400.5
White pine	4.2	8.4	1.4	--	--	14.0
Total	4.2	135.5	308.0	152.5	4.2	604.4
Hardwood types:						
Oak-pine	14.7	82.3	124.1	29.2	4.5	254.8
Oak-hickory[2]	362.1	404.8	561.8	115.2	12.6	1,456.5
Oak-gum-cypress	75.0	28.8	46.2	19.0	7.8	176.8
Total	451.8	515.9	732.1	163.4	24.9	1,888.1
All types	456.0	651.4	1,040.1	315.9	29.1	2,492.5
Percent	18.3	26.1	41.7	12.7	1.2	100.0

SOUTHERN PIEDMONT

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	42.0	41.8	21.9	--	105.7
Shortleaf pine	12.9	215.6	320.8	58.8	--	608.1
Virginia pine	--	87.3	313.2	182.8	--	583.3
White pine	4.2	--	4.1	--	--	8.3
Total	17.1	344.9	679.9	263.5	--	1,305.4
Hardwood types:						
Oak-pine	22.6	120.3	227.7	35.3	--	405.9
Oak-hickory[2]	310.6	529.1	812.7	197.5	26.3	1,876.2
Oak-gum-cypress	22.8	43.8	66.3	15.7	11.2	159.8
Total	356.0	693.2	1,106.7	248.5	37.5	2,441.9
All types	373.1	1,038.1	1,786.6	512.0	37.5	3,747.3
Percent	9.9	27.7	47.7	13.7	1.0	100.0

[1] See description of forest type and stand-size class under "Definition of Terms."

[2] Small area of maple-beech-birch type included with oak-hickory type.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, Entire Piedmont, 1957

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine	41.4	265.5	26.1	--	--	333.0
Shortleaf pine	152.5	1,072.3	271.7	--	--	1,496.5
Virginia pine	66.6	705.9	201.6	5.6	1.7	981.4
Total	260.5	2,043.7	499.4	5.6	1.7	2,810.9
White pine	63.0	54.2	3.3	--	1.6	122.1
Hemlock	7.1	7.2	--	--	--	14.3
Redcedar	3.0	5.7	6.3	--	--	15.0
Total sftwds.	333.6	2,110.8	509.0	5.6	3.3	2,962.3
Hardwoods:						
Blackgum	74.2	93.9	13.2	2.5	--	183.8
Sweetgum	153.4	228.6	38.2	12.3	--	432.5
Yellow-poplar	694.6	444.7	219.5	13.0	1.1	1,372.9
Soft maple	114.5	138.3	48.5	2.2	--	303.5
Other soft hdwds.	154.8	67.6	40.4	4.0	--	266.8
Total	1,191.5	973.1	359.8	34.0	1.1	2,559.5
White & swamp chestnut oaks	655.9	857.1	211.3	2.0	5.1	1,731.4
Other white oaks	362.0	373.8	97.7	3.8	--	837.3
Northern red oak	380.3	220.0	49.4	3.8	5.6	659.1
Other red oaks	555.3	607.1	160.3	5.3	--	1,328.0
Hickory	320.8	304.0	88.4	8.3	--	721.5
Ash	39.2	22.0	31.7	--	--	92.9
Beech	49.8	54.2	7.6	--	--	111.6
Black walnut	38.2	12.4	3.6	2.6	--	56.8
Other hard hdwds.	111.8	32.3	22.8	1.9	4.3	173.1
Total	2,513.3	2,482.9	672.8	27.7	15.0	5,711.7
Total hdwds.	3,704.8	3,456.0	1,032.6	61.7	16.1	8,271.2
All species	4,038.4	5,566.8	1,541.6	67.3	19.4	11,233.5
Percent	35.9	49.6	13.7	0.6	0.2	100.0

[1] Log scale, International 1/4-inch rule.

[2] See "Definition of Terms" for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class, Entire Piedmont, 1957

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Loblolly pine	164.3	150.5	18.2	--	333.0	3.0
Shortleaf pine	1,081.6	346.8	68.1	--	1,496.5	13.3
Virginia pine	778.6	195.8	7.0	--	981.4	8.7
Total	2,024.5	693.1	93.3	--	2,810.9	25.0
White pine	34.0	63.6	24.5	--	122.1	1.1
Hemlock	2.5	11.8	--	--	14.3	0.1
Redcedar	15.0	--	--	--	15.0	0.2
Total sftwds.	2,076.0	768.5	117.8	--	2,962.3	26.4
Hardwoods:						
Blackgum	56.4	101.1	26.3	--	183.8	1.6
Sweetgum	130.0	238.3	51.9	12.3	432.5	3.9
Yellow-poplar	285.6	749.3	265.5	72.5	1,372.9	12.2
Soft maple	99.5	153.5	35.3	15.2	303.5	2.7
Other soft hdwds.	64.8	129.1	64.5	8.4	266.8	2.4
Total	636.3	1,371.3	443.5	108.4	2,559.5	22.8
White & swamp chestnut oaks	477.3	957.4	190.7	106.0	1,731.4	15.4
Other white oaks	243.9	398.0	86.8	108.6	837.3	7.5
Northern red oak	110.3	272.5	95.2	181.1	659.1	5.9
Other red oaks	317.9	688.1	180.9	141.1	1,328.0	11.8
Hickory	174.3	403.3	94.7	49.2	721.5	6.4
Ash	33.7	46.7	12.5	--	92.9	0.8
Beech	17.4	53.9	34.4	5.9	111.6	1.0
Black walnut	14.0	38.8	4.0	--	56.8	0.5
Other hard hdwds.	42.2	97.3	33.6	--	173.1	1.5
Total	1,431.0	2,956.0	732.8	591.9	5,711.7	50.8
Total hdwds.	2,067.3	4,327.3	1,176,3	700.3	8,271.2	73.6
All species	4,143.3	5,095.8	1,294.1	700.3	11,233.5	100.0
Percent	36.9	45.4	11.5	6.2	100.0	--

---

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5a.--Net volume[1] of sawtimber by species and diameter class, Northern Piedmont, 1957

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Loblolly pine	9.6	16.0	--	--	25.6	0.5
Shortleaf pine	210.9	78.0	--	--	288.9	5.9
Virginia pine	381.9	107.6	7.0	--	496.5	10.2
Total	602.4	201.6	7.0	--	811.0	16.6
White pine	16.4	25.7	--	--	42.1	0.9
Hemlock	0.9	6.2	--	--	7.1	0.1
Redcedar	4.8	--	--	--	4.8	0.1
Total sftwds.	624.5	233.5	7.0	--	865.0	17.7
Hardwoods:						
Blackgum	21.6	57.7	8.2	--	87.5	1.8
Sweetgum	22.6	52.5	16.1	--	91.2	1.9
Yellow-poplar	110.6	344.2	116.5	48.6	619.9	12.7
Soft maple	39.8	64.0	6.0	15.2	125.0	2.5
Other soft hdwds.	19.7	63.5	45.6	--	128.8	2.6
Total	214.3	581.9	192.4	63.8	1,052.4	21.5
White & swamp chestnut oaks	246.0	553.0	58.3	39.8	897.1	18.4
Other white oaks	122.7	206.4	63.6	77.7	470.4	9.6
Northern red oak	46.5	118.1	53.2	98.4	316.2	6.5
Other red oaks	137.1	363.8	104.6	79.2	684.7	14.0
Hickory	82.0	188.8	49.4	29.4	349.6	7.2
Ash	11.6	34.8	4.9	--	51.3	1.0
Beech	4.1	24.0	3.2	5.9	37.2	0.8
Black walnut	9.5	32.0	4.0	--	45.5	0.9
Other hard hdwds.	24.0	58.4	33.6	--	116.0	2.4
Total	683.5	1,579.3	374.8	330.4	2,968.0	60.8
Total hdwds.	897.8	2,161.2	567.2	394.2	4,020.4	82.3
All species	1,522.3	2,394.7	574.2	394.2	4,885.4	100.0
Percent	31.2	49.0	11.7	8.1	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5b.--Net volume[1] of sawtimber by species and diameter class, Southern Piedmont, 1957

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Loblolly pine	154.7	134.5	18.2	--	307.4	4.9
Shortleaf pine	870.7	268.8	68.1	--	1,207.6	19.0
Virginia pine	396.7	88.2	--	--	484.9	7.6
Total	1,422.1	491.5	86.3	--	1,999.9	31.5
White pine	17.6	37.9	24.5	--	80.0	1.2
Hemlock	1.6	5.6	--	--	7.2	0.1
Redcedar	10.2	--	--	--	10.2	0.2
Total sftwds.	1,451.5	535.0	110.8	--	2,097.3	33.0
Hardwoods:						
Blackgum	34.8	43.4	18.1	--	96.3	1.5
Sweetgum	107.4	185.8	35.8	12.3	341.3	5.4
Yellow-poplar	175.0	405.1	149.0	23.9	753.0	11.9
Soft maple	59.7	89.5	29.3	--	178.5	2.8
Other soft hdwds.	45.1	65.6	18.9	8.4	138.0	2.2
Total	422.0	789.4	251.1	44.6	1,507.1	23.8
White & swamp chestnut oaks	231.3	404.4	132.4	66.2	834.3	13.1
Other white oaks	121.2	191.6	23.2	30.9	366.9	5.8
Northern red oak	63.8	154.4	42.0	82.7	342.9	5.4
Other red oaks	180.8	324.3	76.3	61.9	643.3	10.1
Hickory	92.3	214.5	45.3	19.8	371.9	5.9
Ash	22.1	11.9	7.6	--	41.6	0.6
Beech	13.3	29.9	31.2	--	74.4	1.2
Black walnut	4.5	6.8	--	--	11.3	0.2
Other hard hdwds.	18.2	38.9	--	--	57.1	0.9
Total	747.5	1,376.7	358.0	261.5	2,743.7	43.2
Total hdwds.	1,169.5	2,166.1	609.1	306.1	4,250.8	67.0
All species	2,621.0	2,701.1	719.9	306.1	6,348.1	100.0
Percent	41.3	42.6	11.3	4.8	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1957

(In million board-feet)

ENTIRE PIEDMONT

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	266.3	20.0	--	--	286.3
Shortleaf pine	104.6	985.4	207.8	1.3	--	1,299.1
Virginia pine	--	664.4	180.5	6.8	--	851.7
White pine	41.3	34.8	1.5	--	--	77.6
Total	145.9	1,950.9	409.8	8.1	--	2,514.7
Hardwood types:						
Oak-pine	251.8	620.3	200.1	5.9	--	1,078.1
Oak-hickory	3,333.5	2,713.2	645.9	52.3	16.3	6,761.2
Oak-gum-cypress	503.2	282.4	87.8	3.0	3.1	879.5
Total	3,892.5	3,615.9	1,131.8	59.2	19.4	8,718.8
All types	4,038.4	5,566.8	1,541.6	67.3	19.4	11,233.5
Percent	35.9	49.6	13.7	0.6	0.2	100.0

NORTHERN PIEDMONT

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	18.3	0.6	--	--	18.9
Shortleaf pine	--	160.6	34.0	--	--	194.6
Virginia pine	--	342.0	73.9	--	--	415.9
White pine	8.3	34.8	1.5	--	--	44.6
Total	8.3	555.7	110.0	--	--	674.0
Hardwood types:						
Oak-pine	92.3	253.9	71.9	--	--	418.1
Oak-hickory	1,706.5	1,222.5	301.9	13.7	1.2	3,245.8
Oak-gum-cypress	418.4	94.7	31.3	--	3.1	547.5
Total	2,217.2	1,571.1	405.1	13.7	4.3	4,211.4
All types	2,225.5	2,126.8	515.1	13.7	4.3	4,885.4
Percent	45.6	43.5	10.5	0.3	0.1	100.0

SOUTHERN PIEDMONT

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	248.0	19.4	--	--	267.4
Shortleaf pine	104.6	824.8	173.8	1.3	--	1,104.5
Virginia pine	--	322.4	106.6	6.8	--	435.8
White pine	33.0	--	--	--	--	33.0
Total	137.6	1,395.2	299.8	8.1	--	1,840.7
Hardwood types:						
Oak-pine	161.5	366.4	128.2	3.9	--	660.0
Oak-hickory	1,429.0	1,490.7	542.0	38.6	15.1	3,515.4
Oak-gum-cypress	84.8	187.7	56.5	3.0	--	332.0
Total	1,675.3	2,044.8	726.7	45.5	15.1	4,507.4
All types	1,812.9	3,440.0	1,026.5	53.6	15.1	6,348.1
Percent	28.6	54.2	16.2	0.8	0.2	100.0

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, Entire Piedmont, 1957

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
			PINE			
Grade 1	--	--	11.6	3.2	11.6	0.4
Grade 2	218.2	8.9	71.7	19.9	289.9	10.3
Grade 3	1,691.2	69.0	188.5	52.4	1,879.7	66.9
Grade 4	541.6	22.1	88.1	24.5	629.7	22.4
Total	2,451.0	100.0	359.9	100.0	2,810.9	100.0
			OTHER SOFTWOODS			
Grade 1	--	--	--	--	--	--
Grade 2	1.1	1.5	30.5	39.1	31.6	20.9
Grade 3	52.6	71.6	28.4	36.5	81.0	53.5
Grade 4	19.8	26.9	19.0	24.4	38.8	25.6
Total	73.5	100.0	77.9	100.0	151.4	100.0
			SOFT HARDWOODS			
Grade 1	--	--	172.3	13.5	172.3	6.7
Grade 2	34.6	2.7	250.2	19.6	284.8	11.1
Grade 3	432.4	33.7	342.1	26.8	774.5	30.3
Grade 4	816.1	63.6	511.8	40.1	1,327.9	51.9
Total	1,283.1	100.0	1,276.4	100.0	2,559.5	100.0
			HARD HARDWOODS			
Grade 1	--	--	420.5	14.5	420.5	7.4
Grade 2	132.2	4.7	704.7	24.3	836.9	14.6
Grade 3	413.3	14.7	513.2	17.7	926.5	16.2
Grade 4	2,266.4	80.6	1,261.4	43.5	3,527.8	61.8
Total	2,811.9	100.0	2,899.8	100.0	5,711.7	100.0

[1] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 8.--Net volume[1] of all timber by species and stand-size class,

Entire Piedmont, 1957

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine	99	860	282	--	--	1,241
Shortleaf pine	447	5,270	4,208	34	--	9,959
Virginia pine	338	4,145	4,815	49	5	9,352
Total	884	10,275	9,305	83	5	20,552
White pine	130	145	25	--	4	304
Hemlock	14	27	--	--	--	41
Redcedar	35	82	225	5	--	347
Total sftwds.	1,063	10,529	9,555	88	9	21,244
Hardwoods:						
Blackgum	296	522	199	8	--	1,025
Sweetgum	542	1,118	653	53	--	2,366
Yellow-poplar	2,057	1,768	1,684	64	3	5,576
Soft maple	569	711	667	7	--	1,954
Other soft hdwds.	639	471	458	21	--	1,589
Total	4,103	4,590	3,661	153	3	12,510
White & swamp chestnut oaks	2,552	4,531	2,441	68	13	9,605
Other white oaks	1,297	1,984	1,367	18	--	4,666
Northern red oak	1,107	975	684	18	17	2,801
Other red oaks	1,797	3,065	2,444	17	--	7,323
Hickory	1,346	1,844	1,044	42	--	4,276
Ash	228	175	306	--	--	709
Beech	146	284	98	--	--	528
Black walnut	133	67	153	7	--	360
Dogwood, holly	35	32	135	3	--	205
Other hard hdwds.	464	219	502	36	14	1,235
Total	9,105	13,176	9,174	209	44	31,708
Total hdwds.	13,208	17,766	12,835	362	47	44,218
All species	14,271	28,295	22,390	450	56	65,462
Percent	21.8	43.2	34.2	0.7	0.1	100.0
OTHER MATERIAL						
Sound culls:						
Softwoods	71	642	1,630	232	29	2,604
Hardwoods	2,283	1,984	3,381	392	216	8,256
Rotten culls	201	131	222	54	21	629
Total other material	2,555	2,757	5,233	678	266	11,489

---

[1] Sound wood and bark.

Table 9.--Net volume[1] of all timber by species and diameter class, Entire Piedmont, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	238	124	204	268	368	39	1,241
Shortleaf pine	2,667	2,935	2,002	1,359	848	148	9,959
Virginia pine	3,430	2,960	1,567	866	513	16	9,352
Total	6,335	6,019	3,773	2,493	1,729	203	20,552
White pine	12	38	25	55	130	44	304
Hemlock	12	--	2	4	23	--	41
Redcedar	192	117	34	4	--	--	347
Total sftwds.	6,551	6,174	3,834	2,556	1,882	247	21,244
Hardwoods:							
Blackgum	168	154	178	188	275	62	1,025
Sweetgum	365	295	545	393	624	144	2,366
Yellow-poplar	524	844	696	836	1,927	749	5,576
Soft maple	451	400	237	326	422	118	1,954
Other soft hdwds.	254	277	331	210	343	174	1,589
Total	1,762	1,970	1,987	1,953	3,591	1,247	12,510
White & swamp chestnut oaks	1,308	1,643	1,592	1,640	2,716	706	9,605
Other white oaks	545	1,010	748	789	1,098	476	4,666
Northern red oak	303	380	330	375	767	646	2,801
Other red oaks	1,079	1,180	1,252	1,086	1,959	767	7,323
Hickory	594	679	845	657	1,164	337	4,276
Ash	67	200	171	115	128	28	709
Beech	53	60	115	58	145	97	528
Black walnut	16	52	122	46	114	10	360
Dogwood, holly	130	13	42	4	16	--	205
Other hard hdwds.	404	128	210	147	264	82	1,235
Total	4,499	5,345	5,427	4,917	8,371	3,149	31,708
Total hdwds.	6,261	7,315	7,414	6,870	11,962	4,396	44,218
All species	12,812	13,489	11,248	9,426	13,844	4,643	65,462
Percent	19.6	20.6	17.2	14.4	21.1	7.1	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls:							
Softwoods	545	605	727	437	270	20	2,604
Hardwoods	1,465	1,465	1,239	1,210	1,683	1,194	8,256
Rotten culls	74	142	116	22	65	210	629
Total other material	2,084	2,212	2,082	1,669	2,018	1,424	11,489

---

[1] Sound wood and bark.

Table 9a.--Net volume[1] of all timber by species and diameter class, Northern Piedmont, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	14	--	6	20	39	--	79
Shortleaf pine	462	342	368	309	188	--	1,669
Virginia pine	1,447	1,249	773	427	284	16	4,201
Total	1,923	1,591	1,152	756	511	16	5,949
White pine	6	26	11	27	52	--	122
Hemlock	--	--	2	--	12	--	14
Redcedar	72	30	9	2	--	--	113
Total sftwds.	2,001	1,647	1,174	785	575	16	6,198
Hardwoods:							
Blackgum	79	12	62	72	155	19	399
Sweetgum	149	128	161	65	138	36	677
Yellow-poplar	142	213	218	316	876	365	2,130
Soft maple	211	192	71	130	176	49	829
Other soft hdwds.	111	119	125	65	169	109	698
Total	692	664	637	648	1,514	578	4,733
White & swamp chestnut oaks	624	885	772	822	1,583	231	4,917
Other white oaks	243	403	247	381	580	345	2,199
Northern red oak	135	201	157	157	332	354	1,336
Other red oaks	536	512	526	449	1,044	435	3,502
Hickory	249	231	328	302	547	184	1,841
Ash	42	79	150	40	93	11	415
Beech	17	28	20	13	63	22	163
Black walnut	9	22	98	31	93	10	263
Dogwood, holly	44	--	20	--	10	--	74
Other hard hdwds.	191	64	93	87	160	82	677
Total	2,090	2,425	2,411	2,282	4,505	1,674	15,387
Total hdwds.	2,782	3,089	3,048	2,930	6,019	2,252	20,120
All species	4,783	4,736	4,222	3,715	6,594	2,268	26,318
Percent	18.2	18.0	16.0	14.1	25.1	8.6	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls:							
Softwoods	197	252	328	237	87	20	1,121
Hardwoods	650	673	610	521	785	714	3,953
Rotten culls	16	40	66	7	34	74	237
Total other material	863	965	1,004	765	906	808	5,311

---

[1] Sound wood and bark.

Table 9b.--Net volume[1] of all timber by species and diameter class, Southern Piedmont, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	224	124	198	248	329	39	1,162
Shortleaf pine	2,205	2,593	1,634	1,050	660	148	8,290
Virginia pine	1,983	1,711	789	439	229	--	5,151
Total	4,412	4,428	2,621	1,737	1,218	187	14,603
White pine	6	12	14	28	78	44	182
Hemlock	12	--	--	4	11	--	27
Redcedar	120	87	25	2	--	--	234
Total sftwds.	4,550	4,527	2,660	1,771	1,307	231	15,046
Hardwoods:							
Blackgum	89	142	116	116	120	43	626
Sweetgum	216	167	384	328	486	108	1,689
Yellow-poplar	382	631	478	520	1,051	384	3,446
Soft maple	240	208	166	196	246	69	1,125
Other soft hdwds.	143	158	206	145	174	65	891
Total	1,070	1,306	1,350	1,305	2,077	669	7,777
White & swamp chestnut oaks	684	758	820	818	1,133	475	4,688
Other white oaks	302	607	501	408	518	131	2,467
Northern red oak	168	179	173	218	435	292	1,465
Other red oaks	543	668	726	637	915	332	3,821
Hickory	345	448	517	355	617	153	2,435
Ash	25	121	21	75	35	17	294
Beech	36	32	95	45	82	75	365
Black walnut	7	30	24	15	21	--	97
Dogwood, holly	86	13	22	4	6	--	131
Other hard hdwds.	213	64	117	60	104	--	558
Total	2,409	2,920	3,016	2,635	3,866	1,475	16,321
Total hdwds.	3,479	4,226	4,366	3,940	5,943	2,144	24,098
All species	8,029	8,753	7,026	5,711	7,250	2,375	39,144
Percent	20.5	22.4	17.9	14.6	18.5	6.1	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls:							
Softwoods	348	353	399	200	183	--	1,483
Hardwoods	815	792	629	689	898	480	4,303
Rotten culls	58	102	50	15	31	136	392
Total other material	1,221	1,247	1,078	904	1,112	616	6,178

[1] Sound wood and bark.

Table 10.--Net volume[1] of all timber by species and class of material, Entire Piedmont, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	728	151	362	1,241	96	--
Shortleaf pine	3,382	975	5,602	9,959	273	--
Virginia pine	2,401	561	6,390	9,352	2,127	4
Total	6,511	1,687	12,354	20,552	2,496	4
White pine	224	30	50	304	67	--
Hemlock	24	5	12	41	34	--
Redcedar	28	10	309	347	7	--
Total sftwds.	6,787	1,732	12,725	21,244	2,604	4
Hardwoods:						
Blackgum	392	133	500	1,025	290	53
Sweetgum	910	251	1,205	2,366	227	13
Yellow-poplar	2,823	689	2,064	5,576	381	103
Soft maple	637	229	1,088	1,954	1,086	95
Other soft hdwds.	541	186	862	1,589	470	6
Total	5,303	1,488	5,719	12,510	2,454	270
White & swamp chestnut oaks	3,453	1,609	4,543	9,605	834	48
Other white oaks	1,660	703	2,303	4,666	1,200	70
Northern red oak	1,275	513	1,013	2,801	456	21
Other red oaks	2,629	1,183	3,511	7,323	767	57
Hickory	1,459	699	2,118	4,276	403	28
Ash	208	63	438	709	310	16
Beech	229	71	228	528	211	--
Black walnut	117	53	190	360	179	8
Dogwood, holly	13	7	185	205	129	16
Scrub oak[2]	--	--	--	--	445	6
Other hard hdwds.	343	150	742	1,235	868	85
Total	11,386	5,051	15,271	31,708	5,802	355
Total hdwds.	16,689	6,539	20,990	44,218	8,256	625
All species	23,476	8,271	33,715	65,462	10,860	629
Percent	35.9	12.6	51.5	100.0	94.5	5.5

---

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 10a.--Net volume[1] of all timber by species and class of material,

Northern Piedmont, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	52	13	14	79	22	--
Shortleaf pine	644	221	804	1,669	53	--
Virginia pine	1,158	347	2,696	4,201	999	3
Total	1,854	581	3,514	5,949	1,074	3
White pine	82	8	32	122	22	--
Hemlock	12	2	--	14	20	--
Redcedar	9	2	102	113	5	--
Total sftwds.	1,957	593	3,648	6,198	1,121	3
Hardwoods:						
Blackgum	186	60	153	399	129	19
Sweetgum	189	50	438	677	46	--
Yellow-poplar	1,269	288	573	2,130	205	27
Soft maple	266	89	474	829	437	22
Other soft hdwds.	259	84	355	698	238	--
Total	2,169	571	1,993	4,733	1,055	68
White & swamp chestnut oaks	1,825	811	2,281	4,917	411	35
Other white oaks	938	368	893	2,199	571	35
Northern red oak	611	232	493	1,336	237	2
Other red oaks	1,358	570	1,574	3,502	360	31
Hickory	703	330	808	1,841	194	6
Ash	110	34	271	415	144	16
Beech	76	22	65	163	85	--
Black walnut	93	41	129	263	117	8
Dogwood, holly	7	3	64	74	72	3
Scrub oak[2]	--	--	--	--	362	6
Other hard hdwds.	229	100	348	677	345	24
Total	5,950	2,511	6,926	15,387	2,898	166
Total hdwds.	8,119	3,082	8,919	20,120	3,953	234
All species	10,076	3,675	12,567	26,318	5,074	237
Percent	38.3	14.0	47.7	100.0	95.5	4.5

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 10b.--Net volume[1] of all timber by species and class of material, Southern Piedmont, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	676	138	348	1,162	74	--
Shortleaf pine	2,738	754	4,798	8,290	220	--
Virginia pine	1,243	214	3,694	5,151	1,128	1
Total	4,657	1,106	8,840	14,603	1,422	1
White pine	142	22	18	182	45	--
Hemlock	12	3	12	27	14	--
Redcedar	19	8	207	234	2	--
Total sftwds.	4,830	1,139	9,077	15,046	1,483	1
Hardwoods:						
Blackgum	206	73	347	626	161	34
Sweetgum	721	201	767	1,689	181	13
Yellow-poplar	1,554	401	1,491	3,446	176	76
Soft maple	371	140	614	1,125	649	73
Other soft hdwds.	282	102	507	891	232	6
Total	3,134	917	3,726	7,777	1,399	202
White & swamp chestnut oaks	1,628	798	2,262	4,688	423	13
Other white oaks	722	335	1,410	2,467	629	35
Northern red oak	664	281	520	1,465	219	19
Other red oaks	1,271	613	1,937	3,821	407	26
Hickory	756	369	1,310	2,435	209	22
Ash	98	29	167	294	166	--
Beech	153	49	163	365	126	--
Black walnut	24	12	61	97	62	--
Dogwood, holly	6	4	121	131	57	13
Scrub oak[2]	--	--	--	--	83	--
Other hard hdwds.	114	50	394	558	523	61
Total	5,436	2,540	8,345	16,321	2,904	189
Total hdwds.	8,570	3,457	12,071	24,098	4,303	391
All species	13,400	4,596	21,148	39,144	5,786	392
Percent	34.2	11.8	54.0	100.0	93.7	6.3

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, Entire Piedmont, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	1,047	359	--	--	1,406
Shortleaf pine	249	5,201	3,897	26	--	9,373
Virginia pine	--	3,590	4,822	104	--	8,516
White pine	84	78	3	--	--	165
Total	333	9,916	9,081	130	--	19,460
Hardwood types:						
Oak-pine	899	3,322	2,297	22	--	6,540
Oak-hickory	11,198	13,740	10,153	274	46	35,411
Oak-gum-cypress	1,841	1,317	859	24	10	4,051
Total	13,938	18,379	13,309	320	56	46,002
All types	14,271	28,295	22,390	450	56	65,462
Percent	21.8	43.2	34.2	0.7	0.1	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	58	60	30	--	148
Shortleaf pine	13	288	380	--	--	681
Virginia pine	--	390	1,273	216	--	1,879
White pine	49	5	2	--	--	56
Total	62	741	1,715	246	--	2,764
Hardwood types:						
Oak-pine	114	328	474	21	61	998
Oak-hickory	1,921	1,434	2,761	408	116	6,640
Oak-gum-cypress	458	254	283	3	89	1,087
Total	2,493	2,016	3,518	432	266	8,725
All types	2,555	2,757	5,233	678	266	11,489
Percent	22.2	24.0	45.6	5.9	2.3	100.0

---

[1] Sound wood and bark.

Table 11a.--Net volume[1] of all timber by forest type and stand-size class, Northern Piedmont, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	78	64	--	--	142
Shortleaf pine	--	754	628	8	--	1,390
Virginia pine	--	2,026	1,743	38	--	3,807
White pine	18	78	3	--	--	99
Total	18	2,936	2,438	46	--	5,438
Hardwood types:						
Oak-pine	338	1,395	761	11	--	2,505
Oak-hickory	5,645	6,171	4,097	82	4	15,999
Oak-gum-cypress	1,437	535	379	15	10	2,376
Total	7,420	8,101	5,237	108	14	20,880
All types	7,438	11,037	7,675	154	14	26,318
Percent	28.2	41.9	29.2	0.6	0.1	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	26	10	--	--	36
Shortleaf pine	--	49	103	--	--	152
Virginia pine	--	177	605	137	--	919
White pine	41	5	--	--	--	46
Total	41	257	718	137	--	1,153
Hardwood types:						
Oak-pine	31	79	156	4	61	331
Oak-hickory	1,165	622	1,221	200	--	3,208
Oak-gum-cypress	344	119	87	3	66	619
Total	1,540	820	1,464	207	127	4,158
All types	1,581	1,077	2,182	344	127	5,311
Percent	29.7	20.3	41.1	6.5	2.4	100.0

[1] Sound wood and bark.

Table 11b.--Net volume[1] of all timber by forest type and stand-size class, Southern Piedmont, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	969	295	--	--	1,264
Shortleaf pine	249	4,447	3,269	18	--	7,983
Virginia pine	--	1,564	3,079	66	--	4,709
White pine	66	--	--	--	--	66
Total	315	6,980	6,643	84	--	14,022
Hardwood types:						
Oak-pine	561	1,927	1,536	11	--	4,035
Oak-hickory	5,553	7,569	6,056	192	42	19,412
Oak-gum-cypress	404	782	480	9	--	1,675
Total	6,518	10,278	8,072	212	42	25,122
All types	6,833	17,258	14,715	296	42	39,144
Percent	17.4	44.1	37.6	0.8	0.1	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	32	50	30	--	112
Shortleaf pine	13	239	277	--	--	529
Virginia pine	--	213	668	79	--	960
White pine	8	--	2	--	--	10
Total	21	484	997	109	--	1,611
Hardwood types:						
Oak-pine	83	249	318	17	--	667
Oak-hickory	756	812	1,540	208	116	3,432
Oak-gum-cypress	114	135	196	--	23	468
Total	953	1,196	2,054	225	139	4,567
All types	974	1,680	3,051	334	139	6,178
Percent	15.8	27.2	49.4	5.4	2.2	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, Entire Piedmont, 1957

(In million cubic feet)

GROWING STOCK

Species	Diameter class 6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Softwoods:							
Loblolly pine	13.9	8.5	17.8	20.3	29.2	3.4	93.1
Shortleaf pine	156.2	198.5	147.6	103.8	67.8	12.4	686.3
Virginia pine	201.3	198.9	112.3	65.1	40.1	1.3	619.0
Total	371.4	405.9	277.7	189.2	137.1	17.1	1,398.4
White pine	0.8	2.8	2.3	4.6	11.4	4.2	26.1
Hemlock	0.7	--	0.2	0.3	2.0	--	3.2
Redcedar	12.4	8.9	2.4	0.4	--	--	24.1
Total sftwds.	385.3	417.6	282.6	194.5	150.5	21.3	1,451.8
Hardwoods:							
Blackgum	9.6	10.1	12.7	13.9	21.7	5.1	73.1
Sweetgum	20.9	19.4	39.3	28.9	49.0	11.8	169.3
Yellow-poplar	29.9	55.8	50.0	63.5	153.1	62.1	414.4
Soft maple	25.7	26.6	17.1	24.3	33.4	9.7	136.8
Other soft hdwds.	14.3	18.2	23.9	16.0	27.4	14.3	114.1
Total	100.4	130.1	143.0	146.6	284.6	103.0	907.7
White & swamp chestnut oaks	74.9	108.2	114.3	123.4	215.6	58.5	694.9
Other white oaks	31.3	67.0	53.6	60.0	86.7	39.5	338.1
Northern red oak	17.3	25.0	23.6	28.5	61.0	53.7	209.1
Other red oaks	61.6	77.7	90.2	82.2	154.8	63.4	529.9
Hickory	33.8	44.4	60.7	49.8	92.7	27.8	309.2
Ash	3.8	13.1	12.2	8.6	10.0	2.3	50.0
Beech	3.1	4.0	8.2	4.3	11.5	7.9	39.0
Black walnut	0.9	3.4	8.8	3.7	8.9	0.8	26.5
Dogwood, holly	7.3	0.9	3.1	0.2	1.2	--	12.7
Other hard hdwds.	22.9	8.4	15.0	11.1	21.0	6.7	85.1
Total	256.9	352.1	389.7	371.8	663.4	260.6	2,294.5
Total hdwds.	357.3	482.2	532.7	518.4	948.0	363.6	3,202.2
All species	742.6	899.8	815.3	712.9	1,098.5	384.9	4,654.0
Percent	16.0	19.3	17.5	15.3	23.6	8.3	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	32.0	40.6	53.6	33.8	22.0	1.7	183.7
Hardwoods	83.5	97.1	89.2	90.5	132.7	99.0	592.0
Rotten culls	4.2	9.4	8.2	1.8	4.9	17.4	45.9
Total other material	119.7	147.1	151.0	126.1	159.6	118.1	821.6

---

[1] Excludes bark.

Table 13.--Net volume[1] of all timber by species and class of material, Entire Piedmont, 1957

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	53.9	16.8	22.4	93.1	6.7	--
Shortleaf pine	246.7	84.9	354.7	686.3	19.1	--
Virginia pine	180.9	37.9	400.2	619.0	149.3	0.3
Total	481.5	139.6	777.3	1,398.4	175.1	0.3
White pine	19.8	2.7	3.6	26.1	5.4	--
Hemlock	2.2	0.3	0.7	3.2	2.8	--
Redcedar	2.5	0.3	21.3	24.1	0.4	--
Total sftwds.	506.0	142.9	802.9	1,451.8	183.7	0.3
Hardwoods:						
Blackgum	30.6	10.1	32.4	73.1	19.8	3.8
Sweetgum	72.6	17.1	79.6	169.3	17.0	0.9
Yellow-poplar	225.8	52.9	135.7	414.4	27.6	8.3
Soft maple	50.6	16.8	69.4	136.8	79.2	6.7
Other soft hdwds.	43.9	13.8	56.4	114.1	32.9	0.5
Total	423.5	110.7	373.5	907.7	176.5	20.2
White & swamp chestnut oaks	279.5	118.0	297.4	694.9	61.7	3.5
Other white oaks	133.5	52.7	151.9	338.1	87.8	5.3
Northern red oak	103.3	39.9	65.9	209.1	34.3	1.8
Other red oaks	212.8	87.6	229.5	529.9	56.8	4.2
Hickory	116.8	53.5	138.9	309.2	28.8	1.9
Ash	16.5	4.4	29.1	50.0	22.1	1.2
Beech	18.1	5.6	15.3	39.0	15.9	--
Black walnut	9.3	4.1	13.1	26.5	12.3	0.6
Dogwood, holly	1.0	0.4	11.3	12.7	8.2	1.0
Scrub oak[2]	--	--	--	--	28.6	0.3
Other hard hdwds.	27.8	11.0	46.3	85.1	59.0	5.6
Total	918.6	377.2	998.7	2,294.5	415.5	25.4
Total hdwds.	1,342.1	487.9	1,372.2	3,202.2	592.0	45.6
All species	1,848.1	630.8	2,175.1	4,654.0	775.7	45.9
Percent	39.7	13.6	46.7	100.0	94.4	5.6

[1] Excludes bark.

[2] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, Entire Piedmont, 1957

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Loblolly pine					
Softwood	--	4,924	391	--	2,045
Hardwood	--	884	23	--	348
Shortleaf pine					
Softwood	6,679	3,432	453	--	1,467
Hardwood	1,398	441	41	14	190
Virginia pine					
Softwood	--	3,113	292	19	701
Hardwood	--	757	60	4	164
White pine					
Softwood	4,785	3,922	266	--	3,333
Hardwood	146	223	--	--	139
Oak-pine					
Softwood	2,667	1,277	263	--	683
Hardwood	4,130	1,784	305	57	949
Oak-hickory					
Softwood	157	175	41	9	98
Hardwood	4,505	2,731	573	186	1,930
Oak-gum-cypress					
Softwood	19	311	--	--	72
Hardwood	5,127	3,577	781	114	2,540
All types					
Softwood	402	1,249	180	10	475
Hardwood	4,469	2,046	365	87	1,326

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, Entire Piedmont, 1957

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees
Loblolly pine										
Softwood	--	--	19.6	1.0	6.4	0.8	--	1.2	10.1	1.0
Hardwood	--	--	3.2	0.2	0.9	0.4	--	--	1.6	0.3
Shortleaf pine										
Softwood	15.5	--	17.4	0.8	7.9	0.7	0.2	--	10.1	0.6
Hardwood	3.7	1.0	3.1	0.4	1.4	0.2	(2/)	--	1.8	0.3
Virginia pine										
Softwood	--	--	17.3	1.7	8.4	2.3	0.2	0.7	7.5	1.7
Hardwood	--	--	3.6	0.6	1.0	0.2	0.1	0.1	1.2	0.2
White pine										
Softwood	9.5	2.1	8.6	0.2	0.5	0.4	--	--	6.9	1.0
Hardwood	0.5	3.7	0.7	0.4	--	--	--	--	0.4	1.5
Oak-pine										
Softwood	7.6	0.7	6.2	0.3	2.7	0.3	0.1	0.2	3.8	0.3
Hardwood	16.4	2.3	10.2	1.3	3.8	1.1	0.2	0.9	6.1	1.2
Oak-hickory										
Softwood	0.7	(2/)	0.9	(2/)	0.5	(2/)	(2/)	0.1	0.6	(2/)
Hardwood	15.9	2.8	13.8	1.5	6.9	2.0	0.9	1.4	10.0	1.9
Oak-gum-cypress										
Softwood	0.1	--	0.8	(2/)	0.2	--	--	--	0.2	(2/)
Hardwood	18.8	4.7	17.4	3.5	7.5	2.5	0.6	1.7	11.8	3.2
All types										
Softwood	1.3	0.1	6.2	0.4	3.4	0.6	0.1	0.3	3.4	0.4
Hardwood	15.9	3.0	10.5	1.3	4.5	1.3	0.5	0.8	7.1	1.4

[1] Sound wood and bark.

[2] Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, Entire Piedmont, 1957

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	712,027	217,919	39,730	1,488	971,164
Sound culls	109,578	26,095	9,751	240	145,664
Rotten culls	--	71	35	--	106
Total	821,605	244,085	49,516	1,728	1,116,934
Other softwoods:					
Sound trees	115,319	9,352	1,122	291	126,084
Sound culls	5,915	1,161	331	19	7,426
Rotten culls	--	--	--	--	--
Total	121,234	10,513	1,453	310	133,510
Soft hardwoods:					
Sound trees	494,513	91,595	15,474	5,255	606,837
Sound culls	206,948	26,494	3,503	1,310	238,255
Rotten culls	--	2,322	280	202	2,804
Total	701,461	120,411	19,257	6,767	847,896
Hard hardwoods:					
Sound trees	1,094,200	222,804	39,145	12,970	1,369,119
Sound culls	587,150	63,546	8,060	3,553	662,309
Rotten culls	--	4,861	347	622	5,830
Total	1,681,350	291,211	47,552	17,145	2,037,258
All species	3,325,650	666,220	117,778	25,950	4,135,598

[1] All trees 1.0 inch d.b.h. and larger

Table 17.--Stocking on commercial forest land by forest type and tree-size class, Entire Piedmont, 1957

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	--	3.9	24.4	91.4	119.7
Shortleaf pine	--	53.5	79.1	651.4	784.0
Virginia pine	4.2	94.5	219.5	665.6	983.8
White pine	--	4.1	4.2	14.0	22.3
Oak-pine	4.4	37.7	135.8	482.8	660.7
Oak-hickory	23.8	255.7	775.2	2,278.0	3,332.7
Oak-gum-cypress	15.4	58.8	107.9	154.5	336.6
All types	47.8	508.2	1,346.1	4,337.7	6,239.8
Percent	0.8	8.1	21.6	69.5	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	62.9	21.5	24.6	10.7	119.7
Shortleaf pine	375.6	279.3	85.9	43.2	784.0
Virginia pine	725.5	184.9	54.6	18.8	983.8
White pine	5.5	12.6	4.2	--	22.3
Oak-pine	299.5	291.4	52.1	17.7	660.7
Oak-hickory	1,245.2	1,575.0	456.0	56.5	3,332.7
Oak-gum-cypress	109.1	150.5	56.0	21.0	336.6
All types	2,823.3	2,515.2	733.4	167.9	6,239.8
Percent	45.2	40.3	11.8	2.7	100.0

Table 18.--Net annual growth by species group and unit of measure, Entire Piedmont, 1957

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
Yellow pines	182.9	72.7	1,201
Other softwoods	5.8	1.8	24
Soft hardwoods	144.9	44.1	682
Hard hardwoods	180.8	65.0	1,006
All species	514.4	183.6	2,913

Table 19.--Net annual growth percentages by species group and unit of measure, Entire Piedmont, 1957

Unit of measure	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	6.51	3.78	5.67	3.17	4.58
Cubic feet	5.20	3.37	4.85	2.83	3.94
Standard cords	5.84	3.47	5.45	3.17	4.45

Table 20.--Average annual timber cut by tree-size class and species group, Entire Piedmont

Tree-size class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
SAWTIMBER (In million board-feet)					
Small sawtimber	179.2	4.0	21.3	82.6	287.1
Large sawtimber	25.6	8.8	49.1	164.9	248.4
All trees	204.8	12.8	70.4	247.5	535.5
GROWING STOCK (In thousand cords)					
Pole trees	716	2	76	203	997
Small sawtimber	510	10	68	263	851
Large sawtimber	61	17	113	415	606
All trees	1,287	29	257	881	2,454
GROWING STOCK (In million cubic feet)					
Pole trees	41.7	0.2	4.8	12.8	59.5
Small sawtimber	38.9	0.9	5.1	20.2	65.1
Large sawtimber	5.0	1.6	9.3	33.6	49.5
All trees	85.6	2.7	19.2	66.6	174.1

Table 21.--Net annual change in volume by species group, Entire Piedmont, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	2,810.9	151.4	2,559.5	5,711.7	11,233.5
Total growth	201.5	6.7	158.5	256.8	623.5
Mortality	18.6	0.9	13.6	76.0	109.1
Net growth	182.9	5.8	144.9	180.8	514.4
Timber cut	204.8	12.8	70.4	247.5	535.5
Loss or gain	-21.9	-7.0	+74.5	-66.7	-21.1
Net volume, Dec. 31, 1957	2,789.0	144.4	2,634.0	5,645.0	11,212.4
Percent change	-0.8	-4.6	+2.9	-1.2	-0.2

GROWING STOCK (In thousand cords)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	20,552	692	12,510	31,708	65,462
Total growth	1,391	30	754	1,336	3,511
Mortality	190	6	72	330	598
Net growth	1,201	24	682	1,006	2,913
Timber cut	1,287	29	257	881	2,454
Loss or gain	-86	-5	+425	+125	+459
Net volume, Dec. 31, 1957	20,466	687	12,935	31,833	65,921
Percent change	-0.4	-0.7	+3.4	+0.4	+0.7

GROWING STOCK (In million cubic feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	1,398.4	53.4	907.7	2,294.5	4,654.0
Total growth	85.4	2.3	49.3	89.1	226.1
Mortality	12.7	0.5	5.2	24.1	42.5
Net growth	72.7	1.8	44.1	65.0	183.6
Timber cut	85.6	2.7	19.2	66.6	174.1
Loss or gain	-12.9	-0.9	+24.9	-1.6	+9.5
Net volume, Dec. 31, 1957	1,385.5	52.5	932.6	2,292.9	4,663.5
Percent change	-0.9	-1.7	+2.7	-0.1	+0.2

Table 21a.--Net annual change in volume by species group, Northern Piedmont, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	811.0	54.0	1,052.4	2,968.0	4,885.4
Total growth	54.1	2.2	64.1	128.1	248.5
Mortality	5.4	0.3	5.6	39.5	50.8
Net growth	48.7	1.9	58.5	88.6	197.7
Timber cut	82.0	10.0	27.5	113.2	232.7
Loss or gain	-33.3	-8.1	+31.0	-24.6	-35.0
Net volume, Dec. 31, 1957	777.7	45.9	1,083.4	2,943.4	4,850.4
Percent change	-4.1	-15.0	+2.9	-0.8	-0.7
GROWING STOCK (In thousand cords)					
Net volume, Jan. 1, 1957	5,949	249	4,733	15,387	26,318
Total growth	407	11	275	620	1,313
Mortality	55	2	27	162	246
Net growth	352	9	248	458	1,067
Timber cut	561	21	87	385	1,054
Loss or gain	-209	-12	+161	+73	+13
Net volume, Dec. 31, 1957	5,740	237	4,894	15,460	26,331
Percent change	-3.5	-4.8	+3.4	+0.5	+0.0
GROWING STOCK (In million cubic feet)					
Net volume, Jan. 1, 1957	399.2	19.3	347.7	1,123.2	1,889.4
Total growth	24.7	0.9	18.2	41.9	85.7
Mortality	3.6	0.2	2.0	12.0	17.8
Net growth	21.1	0.7	16.2	29.9	67.9
Timber cut	36.5	2.0	6.6	29.3	74.4
Loss or gain	-15.4	-1.3	+9.6	+0.6	-6.5
Net volume, Dec. 31, 1957	383.8	18.0	357.3	1,123.8	1,882.9
Percent change	-3.9	-6.7	+2.8	+0.1	-0.3

Table 21b.--Net annual change in volume by species group, Southern Piedmont, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	1,999.9	97.4	1,507.1	2,743.7	6,348.1
Total growth	147.4	4.5	94.4	128.7	375.0
Mortality	13.2	0.6	8.0	36.5	58.3
Net growth	134.2	3.9	86.4	92.2	316.7
Timber cut	122.8	2.8	42.9	134.3	302.8
Loss or gain	+11.4	+1.1	+43.5	-42.1	+13.9
Net volume, Dec. 31, 1957	2,011.3	98.5	1,550.6	2,701.6	6,362.0
Percent change	+0.6	+1.1	+2.9	-1.5	+0.2

GROWING STOCK (In thousand cords)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	14,603	443	7,777	16,321	39,144
Total growth	984	19	479	716	2,198
Mortality	135	4	45	168	352
Net growth	849	15	434	548	1,846
Timber cut	726	8	170	496	1,400
Loss or gain	+123	+7	+264	+52	+446
Net volume, Dec. 31, 1957	14,726	450	8,041	16,373	39,590
Percent change	+0.8	+1.6	+3.4	+0.3	+1.1

GROWING STOCK (In million cubic feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	999.2	34.1	560.0	1,171.3	2,764.6
Total growth	60.7	1.4	31.1	47.2	140.4
Mortality	9.1	0.3	3.2	12.1	24.7
Net growth	51.6	1.1	27.9	35.1	115.7
Timber cut	49.1	0.7	12.6	37.3	99.7
Loss or gain	+2.5	+0.4	+15.3	-2.2	+16.0
Net volume, Dec. 31, 1957	1,001.7	34.5	575.3	1,169.1	2,780.6
Percent change	+0.3	+1.2	+2.7	-0.2	+0.6

Table 22.--Average annual change in volume per acre by stand size and forest type,

Entire Piedmont, 1957

Stand size and forest type	Sawtimber (in board-feet) Growth	Mortality	Timber cut1/	Net change	Growing stock (in standard cords) Growth	Mortality	Timber cut1/	Net change
Sawtimber stands								
Yellow pine	225	27	362	-164	0.90	0.15	1.70	-.95
Oak-pine	223	35	118	70	.79	.11	.54	.14
Oak-hickory	156	44	141	-29	.54	.17	.44	-.07
Oak-gum-cypress	185	41	137	7	.66	.14	.35	.17
All types	178	36	181	-39	.64	.15	.69	-.20
Poletimber stands								
Yellow pine	47	6	19	22	.90	.05	.32	.53
Oak-pine	43	19	3	21	.48	.10	.04	.34
Oak-hickory	55	8	8	39	.48	.06	.05	.37
Oak-gum-cypress	45	14	13	18	.56	.09	.04	.43
All types	51	9	12	30	.63	.06	.14	.43
Other stands								
Yellow pine	1	13	--	-12	.05	.05	--	.00
Oak-pine	2	9	--	-7	.04	.02	--	.02
Oak-hickory	9	6	--	3	.06	.08	--	-.02
Oak-gum-cypress	1	9	--	-8	.07	.06	--	.01
All types	4	10	--	-6	.06	.06	--	.00
All stands								
Yellow pine	83	17	103	-37	.71	.09	.60	.02
Oak-pine	104	23	44	37	.54	.09	.22	.23
Oak-hickory	99	24	72	3	.47	.11	.23	.13
Oak-gum-cypress	109	27	74	8	.53	.11	.19	.23
All types	95	21	78	-4	.55	.10	.34	.11

1/ Excludes timber removed in clearing land.

Table 23.--County area by broad use class, 1957

County	Total area1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Albemarle	476.8	180.7	0.7	14.1	281.3	59.1
Amelia	234.2	69.6	--	0.1	164.5	70.2
Amherst	300.8	76.2	3.6	0.5	220.5	74.2
Appomattox	220.8	63.1	1.8	0.6	155.3	70.9
Bedford	499.8	189.5	1.0	5.1	304.2	61.0
Buckingham	372.5	71.2	5.8	--	295.5	80.6
Campbell	343.7	122.1	1.3	(2/)	220.3	64.3
Charlotte	301.4	88.5	2.7	--	210.2	70.4
Culpeper	248.9	133.1	--	--	115.8	46.5
Cumberland	186.9	51.5	0.7	--	134.7	72.3
Fairfax	270.7	118.7	6.7	1.1	144.2	54.6
Fauquier	422.4	255.9	--	2.0	164.5	38.9
Fluvanna	184.3	59.1	4.5	--	120.7	67.1
Franklin	461.5	168.4	2.1	0.9	290.1	63.1
Goochland	188.8	51.3	5.2	--	132.3	72.1
Greene	97.9	35.7	--	13.8	48.4	49.4
Halifax	517.1	190.0	4.9	1.1	321.1	62.7
Henry	246.4	80.4	5.5	1.7	158.8	65.9
Loudoun	330.9	232.4	0.1	0.2	98.2	29.7
Louisa	330.9	102.1	0.5	--	228.3	69.1
Lunenburg	283.5	82.8	--	--	200.7	70.8
Madison	209.3	89.6	--	32.4	87.3	41.7
Mecklenburg	432.0	160.0	37.8	0.1	234.1	59.4
Nelson	301.4	79.3	1.1	1.2	219.8	73.2
Nottoway	197.1	53.9	0.3	0.7	142.2	72.3
Orange	227.2	84.1	--	0.2	142.9	62.9
Patrick	300.2	80.8	1.7	6.3	211.4	70.8
Pittsylvania	654.1	246.1	1.6	0.1	406.3	62.3
Powhatan	174.1	38.9	3.8	--	131.4	77.2
Prince Edward	228.5	62.0	--	(2/)	166.5	72.9
Prince William	226.6	85.9	4.9	17.8	118.0	53.2
Rappahannock	170.9	74.4	--	31.7	64.8	37.9
Spotsylvania	265.6	71.3	0.8	1.9	191.6	72.4
Stafford	177.3	41.5	4.3	17.6	113.9	65.8
Total Piedmont	10,084.5	3,590.1	103.4	151.2	6,239.8	62.5

1/ Gross area from Bureau of the Census, 1950. Excludes Arlington County and independent cities.

2/ Less than 50 acres.

Table 24.--Ownership of commercial forest land by county, 1957

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Albemarle	279.6	99.4	--	--	0.2	1.5	1.7	0.6
Amelia	164.5	100.0	--	--	--	--	--	--
Amherst	166.5	75.5	53.2	--	0.5	0.3	54.0	24.5
Appomattox	146.2	94.1	--	--	9.1	--	9.1	5.9
Bedford	288.1	94.7	14.5	--	--	1.6	16.1	5.3
Buckingham	283.0	95.8	2.7	--	9.8	--	12.5	4.2
Campbell	220.1	99.9	--	--	--	0.2	0.2	0.1
Charlotte	208.6	99.2	--	1.6	--	--	1.6	0.8
Culpeper	115.8	100.0	--	--	--	--	--	--
Cumberland	119.3	88.6	--	--	15.4	--	15.4	11.4
Fairfax	138.0	95.7	--	6.2	--	--	6.2	4.3
Fauquier	163.3	99.3	--	1.2	--	--	1.2	0.7
Fluvanna	120.7	100.0	--	--	(1/)	--	(1/)	--
Franklin	287.4	99.1	--	2.7	--	--	2.7	0.9
Goochland	132.2	99.9	--	--	0.1	(1/)	0.1	0.1
Greene	48.4	100.0	--	--	--	--	--	--
Halifax	311.6	97.0	--	9.4	0.1	--	9.5	3.0
Henry	157.8	99.4	--	0.9	--	0.1	1.0	0.6
Loudoun	98.2	100.0	--	--	--	--	--	--
Louisa	228.3	100.0	--	--	--	--	--	--
Lunenburg	200.6	100.0	--	0.1	--	--	0.1	(1/)
Madison	87.3	100.0	--	--	--	--	--	--
Mecklenburg	208.8	89.2	--	24.7	0.3	0.3	25.3	10.8
Nelson	205.7	93.6	12.9	--	(1/)	1.2	14.1	6.4
Nottoway	124.8	87.8	--	17.3	0.1	--	17.4	12.2
Orange	142.9	100.0	--	--	--	--	--	--
Patrick	203.7	96.4	--	2.7	--	5.0	7.7	3.6
Pittsylvania	405.8	99.9	--	--	(1/)	0.5	0.5	0.1
Powhatan	129.5	98.6	--	--	1.9	--	1.9	1.4
Prince Edward	159.7	95.9	--	--	6.8	--	6.8	4.1
Prince William	98.4	83.4	--	19.2	0.4	--	19.6	16.6
Rappahannock	64.8	100.0	--	--	--	--	--	--
Spotsylvania	191.6	100.0	--	--	--	--	--	--
Stafford	99.3	87.2	--	14.5	--	0.1	14.6	12.8
Total Piedmont	6,000.5	96.2	83.3	100.5	44.7	10.8	239.3	3.8

1/ Less than 50 acres, or 0.05 percent.

Table 25.--Net volume[1] of sawtimber by county and species group, 1957

(In million board-feet)

County	Softwoods[2]	Gum, yellow-poplar, and soft maple[3]	Oaks and other hard hardwoods	All species
Albemarle	100.3	120.5	292.9	513.7
Amelia	235.9	132.3	131.1	499.3
Amherst	57.7	49.0	219.0	325.7
Appomattox	80.6	56.0	127.7	264.3
Bedford	98.2	86.0	198.6	382.8
Buckingham	107.8	56.4	252.6	416.8
Campbell	59.7	54.1	182.7	296.5
Charlotte	98.3	127.4	180.2	405.9
Culpeper	76.7	34.6	113.0	224.3
Cumberland	76.2	13.7	176.1	266.0
Fairfax	77.6	92.7	295.5	465.8
Fauquier	38.4	42.7	198.0	279.1
Fluvanna	54.0	64.6	97.8	216.4
Franklin	159.3	93.5	184.3	437.1
Goochland	19.1	80.4	117.4	216.9
Greene	16.7	20.2	71.4	108.3
Halifax	233.2	165.9	224.2	623.3
Henry	57.7	31.9	51.5	141.1
Loudoun	13.6	53.3	272.6	339.5
Louisa	106.0	71.3	192.0	369.3
Lunenburg	156.4	94.7	95.9	347.0
Madison	19.6	29.2	128.4	177.2
Mecklenburg	137.8	130.3	174.8	442.9
Nelson	31.2	115.0	199.8	346.0
Nottoway	127.7	58.7	77.1	263.5
Orange	58.9	73.6	157.0	289.5
Patrick	80.3	73.7	118.2	272.2
Pittsylvania	264.3	198.5	354.9	817.7
Powhatan	75.0	66.4	131.6	273.0
Prince Edward	48.9	67.6	82.2	198.7
Prince William	85.6	38.3	207.2	331.1
Rappahannock	5.0	44.5	117.8	167.3
Spotsylvania	74.2	95.9	121.4	291.5
Stafford	30.4	26.6	166.8	223.8
Total Piedmont	2,962.3	2,559.5	5,711.7	11,233.5

[1] Log scale, International 1/4-inch rule.

[2] Includes white pine, hemlock, and redcedar.

[3] Includes other soft hardwoods.

Table 26.--Net volume[1] of sawtimber by county, broad species group, and diameter group, 1957

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Albemarle	84.8	8.5	7.0	213.0	120.0	80.4
Amelia	168.9	54.9	12.1	136.7	54.5	72.2
Amherst	47.4	10.3	--	136.0	59.3	72.7
Appomattox	80.6	--	--	109.5	38.2	36.0
Bedford	78.4	19.8	--	153.2	53.3	78.1
Buckingham	91.8	3.4	12.6	181.5	82.6	44.9
Campbell	56.1	3.6	--	141.9	60.2	34.7
Charlotte	98.3	--	--	157.9	69.7	80.0
Culpeper	70.2	6.5	--	66.1	47.2	34.3
Cumberland	69.1	7.1	--	69.4	21.2	99.2
Fairfax	70.0	7.6	--	160.7	155.1	72.4
Fauquier	38.4	--	--	96.1	80.3	64.3
Fluvanna	54.0	--	--	84.7	40.2	37.5
Franklin	125.0	17.6	16.7	165.6	64.5	47.7
Goochland	15.9	3.2	--	112.4	48.8	36.6
Greene	15.2	1.5	--	37.5	41.8	12.3
Halifax	188.2	14.6	30.4	218.0	114.7	57.4
Henry	42.4	15.3	--	53.0	30.4	--
Loudoun	13.6	--	--	93.7	97.5	134.7
Louisa	102.3	3.7	--	194.7	48.8	19.8
Lunenburg	149.6	6.8	--	129.2	49.2	12.2
Madison	19.6	--	--	52.2	40.9	64.5
Mecklenburg	122.8	15.0	--	159.5	104.8	40.8
Nelson	16.9	14.3	--	126.9	100.8	87.1
Nottoway	101.9	19.8	6.0	64.0	38.8	33.0
Orange	55.4	3.5	--	98.9	54.9	76.8
Patrick	53.5	19.0	7.8	80.6	75.5	35.8
Pittsylvania	190.4	48.7	25.2	207.1	154.0	192.3
Powhatan	65.8	9.2	--	133.0	61.0	4.0
Prince Edward	48.9	--	--	59.2	43.7	46.9
Prince William	85.6	--	--	97.1	92.5	55.9
Rappahannock	2.3	2.7	--	52.6	47.4	62.3
Spotsylvania	70.8	3.4	--	163.0	37.7	16.6
Stafford	30.4	--	--	90.1	70.1	33.2
Total Piedmont	2,524.5	320.0	117.8	4,095.0	2,299.6	1,876.6

[1] Log scale, International 1/4-inch rule.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1957

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Albemarle	409	65	53	34	241	230	1,184	638	2,854
Amelia	788	270	6	--	337	233	520	261	2,415
Amherst	202	34	18	15	51	85	724	468	1,597
Appomattox	520	40	14	--	62	109	585	230	1,560
Bedford	721	62	6	--	482	171	726	393	2,561
Buckingham	474	84	34	--	236	96	1,410	460	2,794
Campbell	536	9	--	--	200	86	850	341	2,022
Charlotte	808	53	12	--	259	267	503	359	2,261
Culpeper	320	90	5	--	113	68	411	253	1,260
Cumberland	831	57	30	--	117	13	337	353	1,738
Fairfax	594	54	--	--	152	189	428	669	2,086
Fauquier	241	16	4	--	143	98	650	378	1,530
Fluvanna	315	20	--	--	143	133	398	191	1,200
Franklin	940	51	60	67	360	139	642	367	2,626
Goochland	292	8	6	--	119	184	512	236	1,357
Greene	74	11	2	3	29	44	129	155	447
Halifax	1,387	164	31	--	569	298	901	412	3,762
Henry	848	52	2	--	110	59	286	92	1,449
Loudoun	107	--	--	--	39	120	469	625	1,360
Louisa	612	53	19	--	329	113	904	309	2,339
Lunenburg	924	52	14	--	399	144	529	147	2,209
Madison	109	8	--	--	90	55	250	299	811
Mecklenburg	1,011	77	12	--	369	248	807	336	2,860
Nelson	131	27	13	12	353	228	483	439	1,686
Nottoway	457	145	12	--	212	111	220	161	1,318
Orange	476	50	40	--	94	153	696	278	1,787
Patrick	246	28	20	58	229	136	717	267	1,701
Pittsylvania	1,753	229	38	8	769	376	969	761	4,903
Powhatan	349	26	13	--	191	127	458	245	1,409
Prince Edward	605	6	6	--	130	133	520	156	1,556
Prince William	522	41	9	--	80	68	674	437	1,831
Rappahannock	6	6	2	--	114	84	164	277	653
Spotsylvania	648	32	14	--	395	199	681	207	2,176
Stafford	364	12	--	--	156	41	451	320	1,344
Total Piedmont	18,620	1,932	495	197	7,672	4,838	20,188	11,520	65,462

---

[1] Sound wood and bark.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1957 (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Albemarle	41	--	--	--	21	40	181	63	346
Amelia	40	4	--	--	60	56	106	12	278
Amherst	87	--	6	--	48	9	240	96	486
Appomattox	56	5	--	--	3	66	49	15	194
Bedford	84	8	2	5	116	50	368	202	835
Buckingham	46	42	--	--	37	8	200	31	364
Campbell	71	4	--	--	15	17	139	47	293
Charlotte	129	25	--	--	28	--	26	59	267
Culpeper	69	15	--	--	54	31	105	18	292
Cumberland	118	--	2	--	23	--	27	18	188
Fairfax	103	4	--	--	23	38	60	152	380
Fauquier	189	34	--	--	55	8	130	100	516
Fluvanna	40	--	--	--	24	87	123	48	322
Franklin	126	9	38	8	160	92	210	149	792
Goochland	48	--	5	--	5	10	72	--	140
Greene	9	--	--	--	10	22	27	36	104
Halifax	46	10	--	--	66	16	83	30	251
Henry	166	7	--	4	54	16	210	57	514
Loudoun	26	--	--	--	22	11	49	80	188
Louisa	90	24	--	4	114	25	103	63	423
Lunenburg	73	--	--	--	124	12	88	44	341
Madison	27	3	4	--	12	33	182	118	379
Mecklenburg	39	9	--	--	102	17	44	54	265
Nelson	46	8	6	10	200	21	356	246	893
Nottoway	24	8	--	--	26	8	19	17	102
Orange	25	--	--	--	21	--	61	6	113
Patrick	32	12	2	--	181	46	285	185	743
Pittsylvania	138	18	--	--	41	40	77	89	403
Powhatan	24	--	--	--	36	--	27	11	98
Prince Edward	45	5	--	--	75	10	44	71	250
Prince William	39	--	--	--	31	15	25	31	141
Rappahanoock	3	--	12	--	15	18	79	47	174
Spotsylvania	104	5	--	--	33	44	55	47	288
Stafford	38	--	--	--	7	16	37	28	126
Total Piedmont	2,241	259	77	31	1,842	882	3,887	2,270	11,489

---

[1] Sound wood and bark.

Table 28.--Average annual volume of sawtimber cut by county and species group[1]

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Albemarle	4.0	1.2	--	3.6	8.8
Amelia	1.6	0.9	--	--	2.5
Amherst	12.2	0.4	1.7	6.8	21.1
Appomattox	5.1	--	7.3	3.2	15.6
Bedford	5.0	--	4.3	12.8	22.1
Buckingham	8.1	--	--	8.6	16.7
Campbell	9.4	--	3.0	4.2	16.6
Charlotte	6.2	--	2.2	7.6	16.0
Culpeper	1.9	--	--	4.7	6.6
Cumberland	2.6	--	--	9.3	11.9
Fairfax	1.0	0.5	0.3	15.6	17.4
Fauquier	5.3	0.8	--	8.6	14.7
Fluvanna	5.4	--	--	4.4	9.8
Franklin	6.8	1.6	4.3	9.8	22.5
Goochland	10.8	--	4.1	4.3	19.2
Greene	--	--	2.2	2.0	4.2
Halifax	19.5	--	6.3	34.3	60.1
Henry	9.0	--	--	5.1	14.1
Loudoun	--	0.1	--	6.0	6.1
Louisa	6.9	--	1.1	12.8	20.8
Lunenburg	9.9	0.3	6.0	6.4	22.6
Madison	0.7	--	4.8	4.1	9.6
Mecklenburg	9.2	--	1.4	16.6	27.2
Nelson	6.2	7.0	7.7	2.9	23.8
Nottoway	20.4	--	1.8	4.4	26.6
Orange	4.6	--	2.5	2.5	9.6
Patrick	0.3	--	0.7	1.1	2.1
Pittsylvania	1.9	--	1.4	6.3	9.6
Powhatan	3.9	--	4.2	1.4	9.5
Prince Edward	3.9	--	--	3.2	7.1
Prince William	--	--	--	9.0	9.0
Rappahannock	0.3	--	--	1.4	1.7
Spotsylvania	10.3	--	0.6	2.1	13.0
Stafford	12.4	--	2.5	22.4	37.3
Total Piedmont	204.8	12.8	70.4	247.5	535.5

[1] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 29.--Average annual volume of growing stock cut by county and species group[1]

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Albemarle	43	3	1	11	58
Amelia	5	2	1	--	8
Amherst	63	1	8	31	103
Appomattox	25	--	16	12	53
Bedford	55	--	28	49	132
Buckingham	46	--	--	37	83
Campbell	42	--	10	13	65
Charlotte	49	--	11	22	82
Culpeper	6	--	--	15	21
Cumberland	18	--	--	26	44
Fairfax	13	1	5	65	84
Fauquier	19	2	1	36	58
Fluvanna	50	--	1	17	68
Franklin	46	5	17	37	105
Goochland	92	1	10	10	113
Greene	--	--	5	5	10
Halifax	96	--	24	103	223
Henry	41	--	--	15	56
Loudoun	--	--	--	14	14
Louisa	60	--	4	41	105
Lunenburg	55	1	20	23	99
Madison	23	--	10	13	46
Mecklenburg	48	--	10	68	126
Nelson	25	13	20	10	68
Nottoway	78	--	11	27	116
Orange	31	--	10	14	55
Patrick	2	--	5	19	26
Pittsylvania	62	--	6	23	91
Powhatan	30	--	10	6	46
Prince Edward	28	--	1	16	45
Prince William	1	--	--	27	28
Rappahannock	4	--	--	3	7
Spotsylvania	87	--	3	9	99
Stafford	44	--	9	64	117
Total Piedmont	1,287	29	257	881	2,454

---

[1] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

> Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.
>
> Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

Softwood logs[1] must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.

Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications[2] for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Species Groups

Yellow pines: Includes loblolly, pond, shortleaf, pitch, Table-Mountain, and Virginia pine.

Other softwoods: White pine, hemlock, and eastern redcedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, willow, elm, hackberry, sycamore, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, river birch, black walnut, black locust, honey locust, mulberry, sourwood, dogwood, holly, and persimmon.

---

[1] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

[2] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

> In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.
>
> In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Preliminary estimates of area by land-use class were based on examination of about 68,800 points systematically spaced on aerial photographs of the Virginia Piedmont. Subsamples of 1,709 photo points classified as forest and 676 in other land uses were established as sample plots on the ground. These ground plots provided adjustments for changes in land use since the date of photography, and supplied detailed measurements and observations needed in evaluating forest conditions.

Forest area.--The sampling intensity of the 1957 survey provided an estimate of the total forest area with a standard error of ±0.7 percent. The probabilities were two out of three that the actual forest area was within ±0.7 percent of the estimated acreage. The standard error per million acres was ±1.8 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.6 percent, or ±5.6 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±3.2 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 3,026 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±7.7 percent, or ±3.2 percent per billion cubic feet.

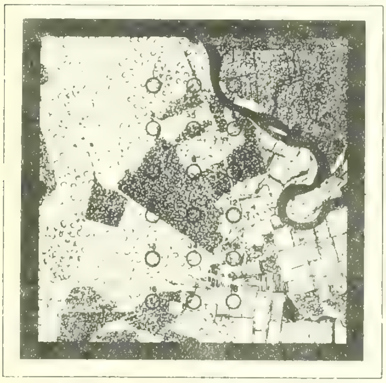
Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data are as follows:

Item	Percent of error	
	Low	High
Forest area	±2.4	±5.9
Growing stock volume	±8.3	±17.0
Board-foot volume	±9.8	±19.4

HOW THE FOREST INVENTORY IS MADE

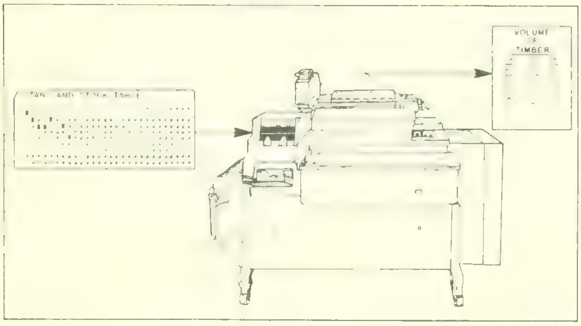
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
No. 26 - 1946 Commodity Drain by County from South Carolina Forests
No. 28 - South Carolina's Forest Resources, 1947
No. 30 - Forest Resources of Northeast Florida, 1949
No. 31 - Forest Resources of Central Florida, 1949
No. 32 - Forest Resources of Northwest Florida, 1949
No. 33 - Forest Resources of South Florida, 1949
No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
No. 36 - Forest Statistics for Florida, 1949
No. 37 - Forest Statistics for Southwest Georgia, 1951
No. 39 - Forest Statistics for Southeast Georgia, 1952
No. 40 - Forest Statistics for Central Georgia, 1952
No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952
No. 42 - Forest Statistics for North Central and North Georgia, 1953
No. 44 - Forest Statistics for Georgia, 1951-53
No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955 (out of print)
No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
No. 49 - North Carolina's Timber Supply, 1955
No. 50 - Forest Statistics for the Coastal Plain of Virginia, 1956

Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South
*No. 47 - 1955 Pulpwood Production in the South (out of print)
*No. 80 - 1956 Pulpwood Production in the South

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

---

*Published in cooperation with the Southern Forest Experiment Station, New Orleans, La.

Agriculture--Asheville

FOREST SURVEY RELEASE NO. 52

APRIL 1958

FOREST STATISTICS FOR THE MOUNTAIN REGION OF VIRGINIA, 1957

by

Mackay B. Bryan, Forester

Division of Forest Economics Research

U. S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Joseph F. Pechanec, Director

in cooperation with the
Virginia
Department of Conservation and Development
Division of Forestry
George W. Dean, State Forester

CLEMSON COLLEGE LIBRARY
MAY 26 1958
AGRI. REF. DEPT.

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics Research, Southeastern Forest Experiment Station, Asheville, North Carolina.

The fivefold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

ACKNOWLEDGMENTS

The Southeastern Station received material assistance on the field phase of the Survey and wishes to acknowledge this cooperation. The Virginia Division of Forestry furnished personnel and equipment for one field crew, and the pulp and paper companies listed below contributed funds through Virginia Forests, Inc., to finance a second crew.

Chesapeake Corp. of Virginia
Continental Can Company
P. H. Glatfelter Company
Johns-Manville Products Corp.
Mead Corporation
National Container Corp. of Va.
Union Bag-Camp Paper Corp.
West Virginia Pulp and Paper Co.

Personnel of the George Washington National Forest, the Jefferson National Forest, and Region 7 Timber Management Surveys cooperated in collecting field data on national forest lands. The Station also wishes to acknowledge cooperation of the Tennessee Valley Authority in conducting the field work in Russell, Smyth, and Washington Counties.

The Division of Forest Economics Research at the Southeastern Station is under the direction of J. F. McCormack. Collection of field data was supervised by Ronald C. Froelich, and aerial photo interpretation was done by W. H. B. Haines. Other staff assistance was as follows:

Field inventory

Thomas R. Bellamy
Hubert H. Broyles
Frank H. Hawley
Philip L. Howard
Davie L. Hunt
Herbert A. Knight
P. F. Lawson, Jr.
Wm. A. McElfresh
Joe P. McClure
Early G. Page
Robert F. Petracca
Clyde D. Steel

Office compilation

Woodfin Black
Eunice Gamble
Agnes Nichols
Louise Shuford
Sammy Wenningham
Camilla Young

CONTENTS

Page

THE PRESENT FOREST SITUATION AND RECENT CHANGES - 1

TABLES FOR THE VIRGINIA MOUNTAINS, 1957

AREA

1. Gross area by broad use class - 7
2. Ownership of commercial forest land - 8
3. Commercial forest area by forest type and stand-size class - - - - - - - - - 9

NET VOLUME OF SAWTIMBER (in million board-feet)

4. By species and stand-size class, Mountain Region - - - - - - - - - - - - - - 10
5. By species and diameter class, Mountain Region - - - - - - - - - - - - - - - 11
5a. By species and diameter class, northern subregion - - - - - - - - - - - - - - 12
5b. By species and diameter class, southern subregion - - - - - - - - - - - - - - 13
6. By forest type and stand-size class - 14
7. By species group, log grade, and tree-size class - - - - - - - - - - - - - - 15

NET VOLUME OF ALL TIMBER (in thousand cords)

8. By species and stand-size class, Mountain Region - - - - - - - - - - - - - - 16
9. By species and diameter class, Mountain Region - - - - - - - - - - - - - - - 17
9a. By species and diameter class, northern subregion - - - - - - - - - - - - - - 18
9b. By species and diameter class, southern subregion - - - - - - - - - - - - - - 19
10. By species and class of material, Mountain Region - - - - - - - - - - - - - - 20
10a. By species and class of material, northern subregion - - - - - - - - - - - - 21
10b. By species and class of material, southern subregion - - - - - - - - - - - - 22
11. By forest type and stand-size class, Mountain Region - - - - - - - - - - - - 23
11a. By forest type and stand-size class, northern subregion - - - - - - - - - - 24
11b. By forest type and stand-size class, southern subregion - - - - - - - - - - 25

NET VOLUME OF ALL TIMBER (in million cubic feet)

12. By species and diameter class - 26
13. By species and class of material - 27

AVERAGE VOLUME PER ACRE

14. Of sawtimber by forest type, species group, and stand-size class - - - - - 28
15. Of all trees by forest type, species group, and stand-size class - - - - - 29

GENERAL

16. Number of trees by species group, diameter class, and quality - - - - - - - 30
17. Stocking on commercial forest land by forest type and tree-size class - - - 31

NET ANNUAL GROWTH

18. By species group and unit of measure - 32
19. Growth percentages by species group and unit of measure - - - - - - - - - - 32

AVERAGE ANNUAL TIMBER CUT

20. Of sawtimber and growing stock by tree-size class and species group - - - - 33

NET ANNUAL CHANGE

21. In sawtimber and growing stock volume by species group, Mountain Region - - 34
21a. In sawtimber and growing stock volume by species group, northern subregion 35
21b. In sawtimber and growing stock volume by species group, southern subregion 36
22. In volume per acre by stand size and forest type - - - - - - - - - - - - - - 37

TABLES FOR COUNTIES, 1957

23. County area by broad use class - 38
24. Ownership of commercial forest land - 39
25. Net volume of sawtimber by species group - - - - - - - - - - - - - - - - - - 40
26. Net volume of sawtimber by broad species group and diameter group - - - - - 41
27. Net volume of all timber by species group and diameter group - - - - - - - - 42
28. Average annual cut of sawtimber by species group - - - - - - - - - - - - - - 44
29. Average annual cut of growing stock by species group - - - - - - - - - - - - 45

DEFINITION OF TERMS - 46

RELIABILITY OF FOREST SURVEY DATA - 50

HOW THE FOREST INVENTORY IS MADE - 52

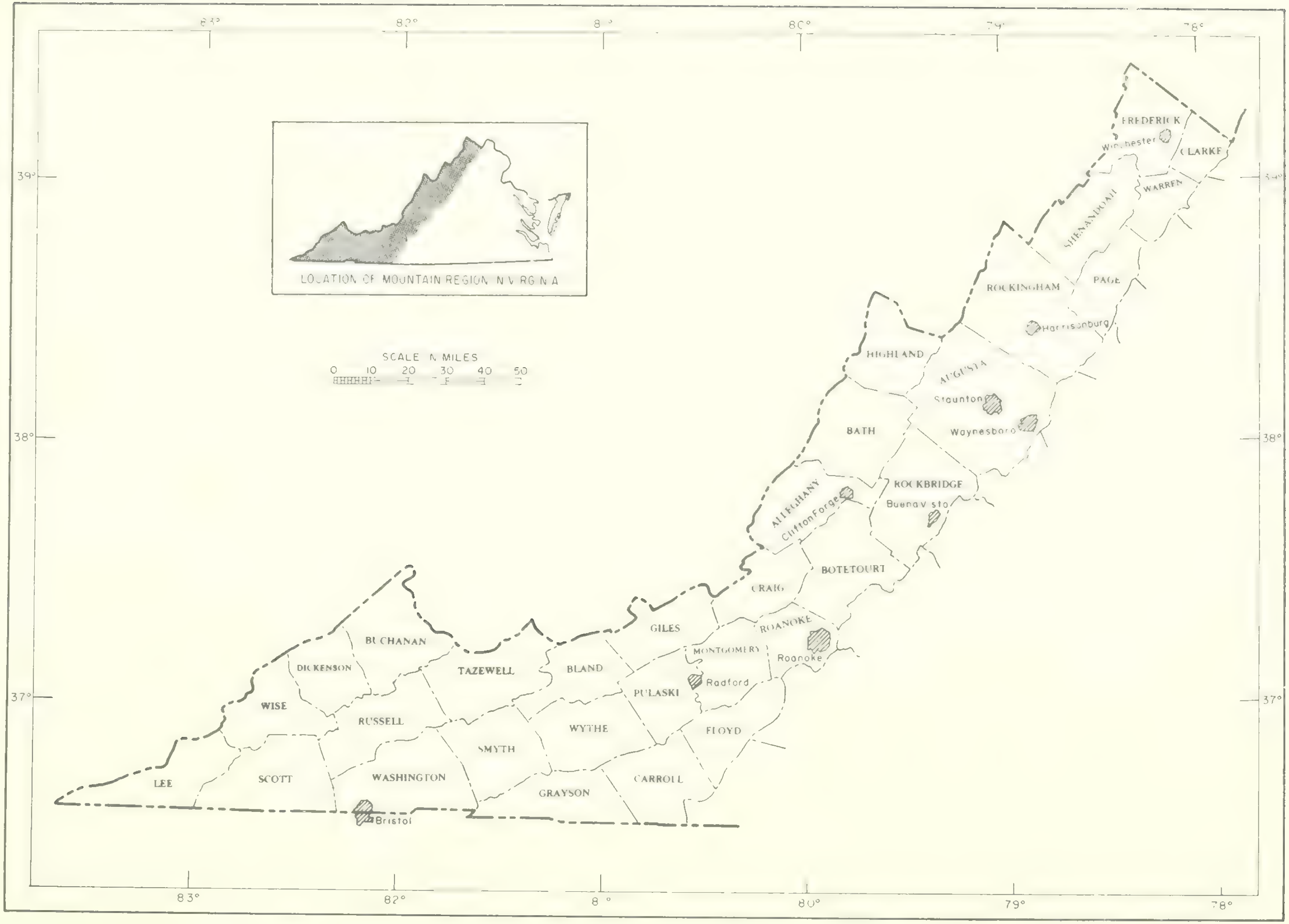


Figure 1.--Counties and independent cities in the Virginia Mountain Region.

FOREST STATISTICS FOR THE MOUNTAIN REGION OF VIRGINIA, 1957

The Mountain Region of Virginia includes 31 counties in the western part of the State within the Appalachian Mountains. Its total area is a little over 9 million acres. The Blue Ridge runs the full length of the region along the eastern edge, and the Cumberlands extend into the southwestern portion where the State borders on Kentucky. Much of the region is made up of valleys and numerous small ridges forming the headwaters of several major rivers. The region is more than half forested, but such sections as the Shenandoah Valley and the Winchester area are well known for their livestock farms, apple orchards, and other agriculture. For purposes of analysis the Mountain Region is divided near Roanoke into northern and southern subregions known as Survey Units 4 and 5, respectively (fig. 1).

Late in the spring of 1956, a forest resource survey of Virginia was begun to obtain current statistics on forest area, timber volume, and timber growth and cut. The survey was started in the coastal plain and progressed through the piedmont to the mountains, where the field work was completed in June 1957. This is the final progress report to be issued by physiographic region. A statistical report for the entire State will be published later this year.

During 1940, a similar survey was made of Virginia's forest resources. Certain comparisons of area and volume determined by the two surveys are presented in the next few pages to point out changes that have occurred during the 17-year period.

THE PRESENT FOREST SITUATION AND RECENT CHANGES

Land-use pattern has changed materially.--Total forest area has increased by 650,000 acres, or 13 percent, in the Virginia mountains since 1940 (fig. 2). During that period the land actively cultivated

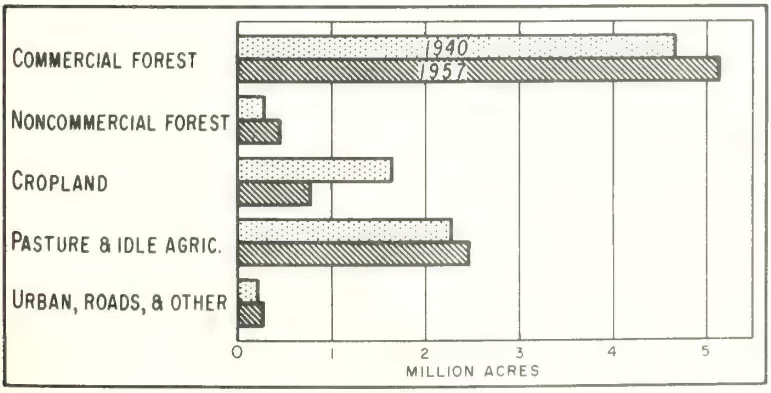
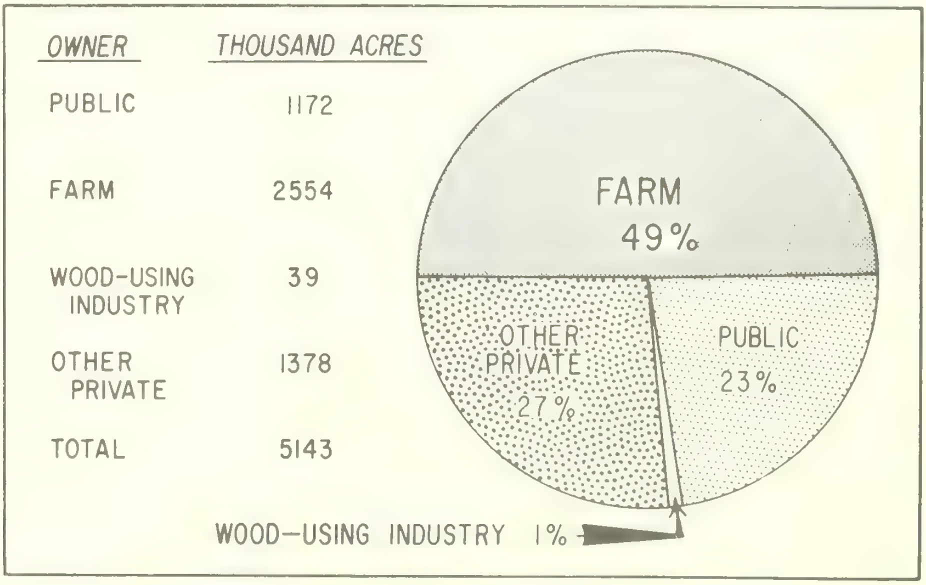


Figure 2.--Comparison of land areas by class of use, 1940 and 1957.

in field crops and orchards dropped 860,000 acres to a little less than half the former area. Some of this land has been converted to improved pasture, while other areas are idle or abandoned and gradually reverting to forest. A more strict interpretation of the definition for nonproductive forest land on national forests is the principal reason for a buildup of almost 60 percent in area of noncommercial forest. Some extremely steep slopes and heads of drains were added to this classification because harvesting of timber would subject the land to excessive erosion and increase the occurrence of land slides. Expansion of the system of highways, spreading urban areas, and suburban development accounted for an increase of nearly 35 percent in nonforest and nonagricultural land uses.

Forest ownership pattern little changed since 1940.--Forest area by class of ownership apparently has changed only slightly in the past 17 years, but differences in sources of ownership data for the two surveys make precise comparisons impossible. Comparison of Census of Agriculture figures shows a small increase (3 percent) in farm woodland area between 1939 and 1954. Few significant changes in public ownership have taken place during recent years in the Virginia mountains.

The resurvey reveals that approximately one-half of the commercial forest land is on farms (fig. 3). Wood-using industries hold only one percent of the commercial forest, and miscellaneous other private owners have 27 percent. The latter group owns one-third of the commercial forest land in the southern subregion, where mining companies have large holdings. National forests account for 22 percent of the commercial forest land and one percent is in State, county, or municipal ownership. More than two-thirds of the national forest land is in the northern subregion, where about 35 percent of the forest land is in public ownership.



OWNER	THOUSAND ACRES
PUBLIC	1172
FARM	2554
WOOD-USING INDUSTRY	39
OTHER PRIVATE	1378
TOTAL	5143

Figure 3.--Ownership of commercial forest land, 1957.

Proportion of area in hardwood types has increased.--The hardwood types, which predominated with 77 percent of the commercial forest area in 1940, have spread to 82 percent in 1957. The Virginia pine type has almost doubled in area during the past 17 years, but the white pine-hemlock type has dropped about one-half and the shortleaf pine type (including pitch and Table-Mountain pine) has decreased by one-fourth (fig. 4). The net change in area of softwood types amounted to a drop of 11 percent, while hardwood types expanded 16 percent. This may have resulted as much from increased stocking of hardwoods in mixed stands as from the removal of softwoods from such stands by cutting. Comparisons were made using 1940 forest type definitions, which included pine-hardwood types with pine types.

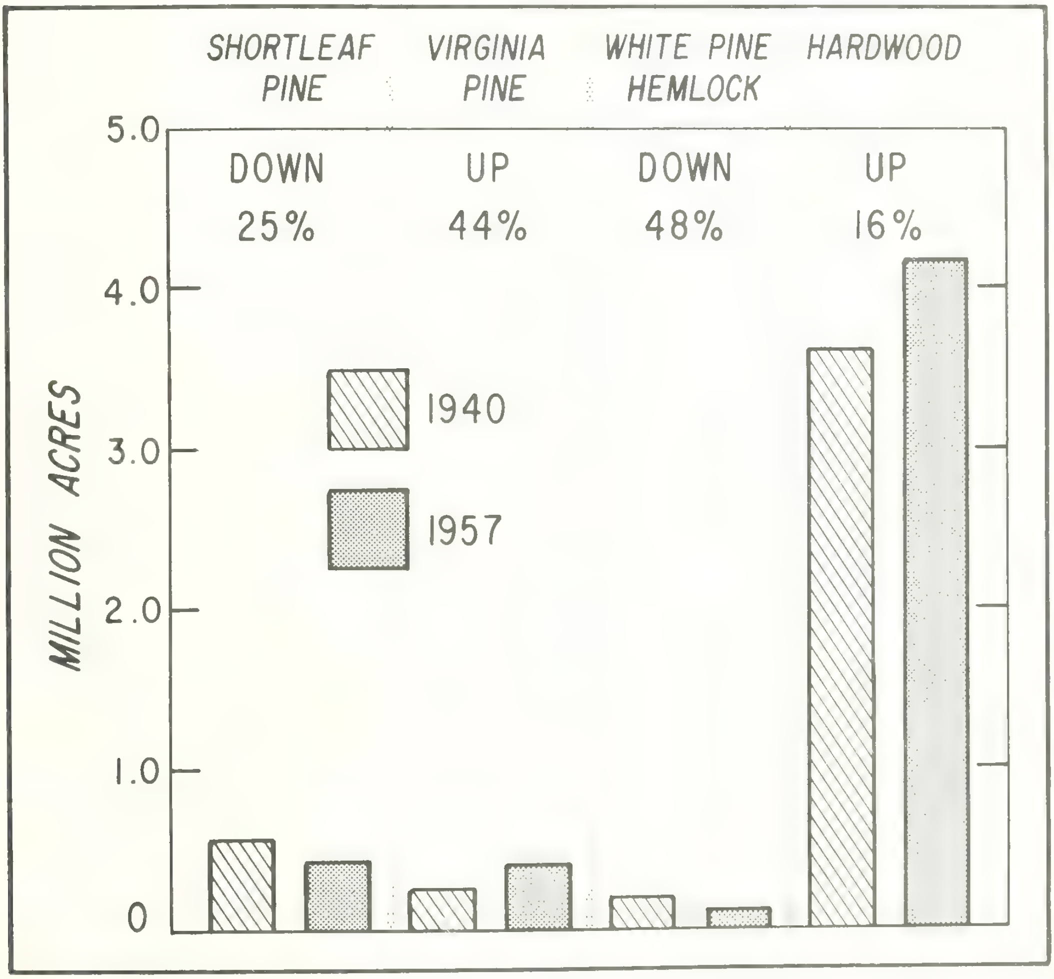


Figure 4.--Change in commercial forest area by forest type, 1940 to 1957.

Volume of each species group increased between surveys.--Cubic volume of sound trees 5.0 inches d.b.h. or larger increased in all four of the broad groups of species. Yellow pines made the modest climb of 8 percent, while other softwoods increased 49 percent, soft hardwoods 79 percent, and hard hardwoods 40 percent (table A). Closer examination of the yellow-pine data reveals that the increase was all in Virginia pine, amounting to 38 percent, as the other yellow pines decreased 4 percent. An encouraging detail in the hardwood situation is the rapid expansion of yellow-poplar growing stock. Cubic volume of that species has more than doubled in the past 17 years. It now makes up over half of the soft hardwood volume, compared to about 43 percent in 1940.

Table A.--Comparison of volumes[1] in all trees 5.0 inches d.b.h. or larger, 1940 and 1957

Class of material and species group	1940	1957	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	236	255	+19	+8
Other softwoods	132	197	+65	+49
Soft hardwoods	303	542	+239	+79
Hard hardwoods	1,495	2,089	+594	+40
All species	2,166	3,083	+917	+42
All live trees:				
Softwoods	418	573	+155	+37
Hardwoods	2,466	3,856	+1,390	+56
All live trees	2,884	4,429	+1,545	+54

[1] Species computation procedures have been used to eliminate differences resulting from changes in standards and definitions between surveys. Thus, estimates shown will not agree with other published figures.

Figure 5 points out the volume supremacy of hardwoods over softwoods in the Mountain Region and shows the rapid gain made by hardwoods in recent years. Enormous volume increases occurred in hardwood poletimber, and a fairly large gain extended up through the 18-inch diameter class. Only slight decreases appear in the larger diameters. Softwood growing stock changed little except for a moderate increase in the smaller diameters.

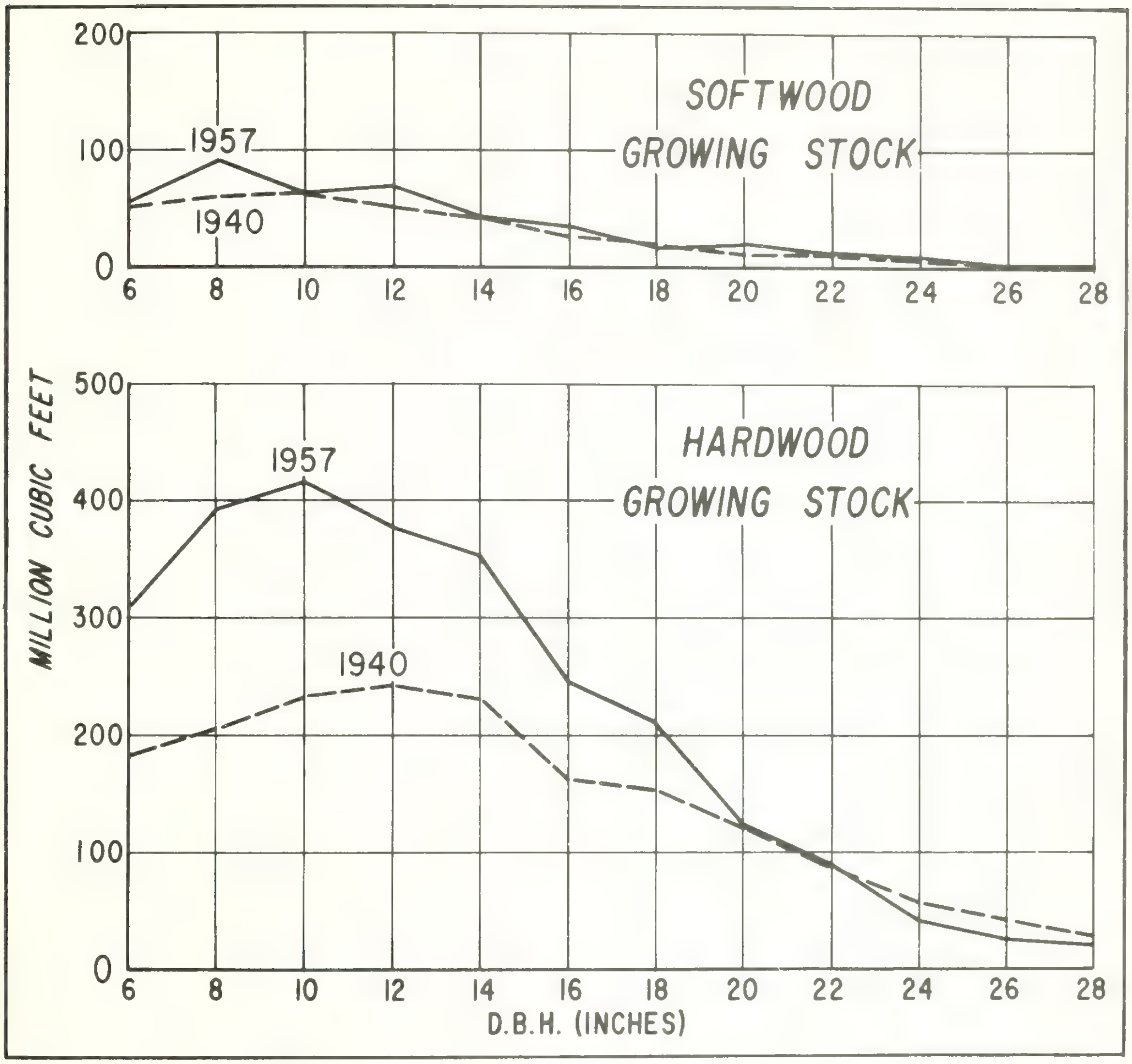


Figure 5.--Comparison of growing stock volume by tree diameter, 1940 and 1957.

Sawtimber volume is 26 percent above the 1940 level.--All the major species of the Virginia Mountain Region have increased in board-foot volume since 1940. The increase ranged from 2 percent in yellow pines to 84 percent for yellow-poplar, with an overall change of 26 percent (table B).

Table B.--Comparison of sawtimber volumes, 1940 and 1957[1]

Species group	1940	1957	Change	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Yellow pines	613	625	+12	+2
White pine	353	425	+72	+20
Oaks	3,285	3,761	+476	+14
Yellow-poplar	463	854	+391	+84
Other species	1,761	2,517	+756	+43
Total	6,475	8,182	+1,707	+26

[1] See footnote 1, table A.

The average sound-tree volume per acre of commercial forest land now runs 1,726 board-feet, 645 cubic feet, or 8.8 cords in the Mountain Region. Average volumes vary by ownership from 710 cubic feet per acre on public lands to 641 on farms and 600 on other private ownerships. The softwood component in the stands is 22 percent of total cubic volume on public lands, 12 percent on farms, and 13 percent on other private lands.

Nine-tenths of the annual volume increase is in hardwoods.--The net increase in cubic-foot volume of growing stock is about 2.4 percent per year, with nine-tenths of the volume gain in hardwoods (table 21). Annual growth after reduction for mortality amounts to more than twice the present rate of cutting. The ratio of growth to cut, however, is far less favorable in the species and sizes in demand commercially. Much of the volume increase is in trees that are small, of poor quality, or of species with little value.

Table 1.--Gross area[1] by broad use class, 1957

Class of use	Area					
	Mountain Region		Northern subregion		Southern subregion	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Forest land:						
Commercial	5,143.0	56.4	2,398.0	55.7	2,745.0	57.0
Noncommercial:						
Productive-reserved	117.6	1.3	103.4	2.4	14.2	0.3
Unproductive	345.9	3.8	275.2	6.4	70.7	1.4
Total forest	5,606.5	61.5	2,776.6	64.5	2,829.9	58.7
Nonforest land:						
Agriculture	3,217.3	35.3	1,384.7	32.1	1,832.6	38.1
Urban and other[2]	267.9	2.9	136.5	3.2	131.4	2.7
Total nonforest	3,485.2	38.2	1,521.2	35.3	1,964.0	40.8
Total land area	9,091.7	99.7	4,297.8	99.8	4,793.9	99.5
Total water area[3]	30.8	0.3	8.1	0.2	22.7	0.5
All classes	9,122.5	100.0	4,305.9	100.0	4,816.6	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[3] Includes 19,800 acres of water reported by the U. S. Bureau of the Census in 1950 and 11,000 acres reported as land by the Bureau of the Census but defined as water by Forest Survey.

Table 2.--Ownership of commercial forest land, 1957

Class of ownership	Commercial forest land					
	Mountain Region		Northern subregion		Southern subregion	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Public land:						
National forest	1,114.3	21.6	799.1	33.3	315.2	11.5
Indian	--	--	--	--	--	--
Other Federal	3.1	0.1	1.8	0.1	1.3	(1/)
Total Federal	1,117.4	21.7	800.9	33.4	316.5	11.5
State	26.3	0.5	7.2	0.3	19.1	0.7
County and municipal	28.2	0.6	23.3	1.0	4.9	0.2
Total public	1,171.9	22.8	831.4	34.7	340.5	12.4
Private land:						
Farm	2,554.1	49.6	1,089.8	45.4	1,464.3	53.3
Wood-using industries	39.2	0.8	4.1	0.2	35.1	1.3
Other	1,377.8	26.8	472.7	19.7	905.1	33.0
Total private	3,971.1	77.2	1,566.6	65.3	2,404.5	87.6
All classes	5,143.0	100.0	2,398.0	100.0	2,745.0	100.0

1/ Less than 0.05 percent.

Table 3.--Commercial forest area by forest type and stand-size class, 1957

(In thousand acres)

MOUNTAIN REGION

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	20.0	86.1	217.5	55.4	4.0	383.0
Virginia pine	--	36.1	155.5	51.0	16.9	259.5
White pine	34.2	29.4	24.2	3.9	4.0	95.7
Total	54.2	151.6	397.2	110.3	24.9	738.2
Hardwood types:						
Oak-pine	14.7	40.9	187.0	39.0	--	281.6
Maple-beech-birch	20.4	10.0	14.8	--	2.8	48.0
Oak-hickory	858.2	757.6	1,858.0	435.3	114.4	4,023.5
Oak-gum-cypress	18.5	--	11.0	11.0	11.2	51.7
Total	911.8	808.5	2,070.8	485.3	128.4	4,404.8
All types	966.0	960.1	2,468.0	595.6	153.3	5,143.0
Percent	18.8	18.6	48.0	11.6	3.0	100.0

NORTHERN SUBREGION

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	14.0	53.3	153.8	25.1	4.0	250.2
Virginia pine	--	27.5	100.9	32.3	12.5	173.2
White pine	22.4	11.0	6.4	--	--	39.8
Total	36.4	91.8	261.1	57.4	16.5	463.2
Hardwood types:						
Oak-pine	11.4	13.0	148.0	21.6	--	194.0
Maple-beech-birch	5.3	--	3.6	--	--	8.9
Oak-hickory	330.7	399.2	805.7	129.3	42.8	1,707.7
Oak-gum-cypress	13.9	--	3.4	3.4	3.5	24.2
Total	361.3	412.2	960.7	154.3	46.3	1,934.8
All types	397.7	504.0	1,221.8	211.7	62.8	2,398.0
Percent	16.6	21.0	51.0	8.8	2.6	100.0

SOUTHERN SUBREGION

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	6.0	32.8	63.7	30.3	--	132.8
Virginia pine	--	8.6	54.6	18.7	4.4	86.3
White pine	11.8	18.4	17.8	3.9	4.0	55.9
Total	17.8	59.8	136.1	52.9	8.4	275.0
Hardwood types:						
Oak-pine	3.3	27.9	39.0	17.4	--	87.6
Maple-beech-birch	15.1	10.0	11.2	--	2.8	39.1
Oak-hickory	527.5	358.4	1,052.3	306.0	71.6	2,315.8
Oak-gum-cypress	4.6	--	7.6	7.6	7.7	27.5
Total	550.5	396.3	1,110.1	331.0	82.1	2,470.0
All types	568.3	456.1	1,246.2	383.9	90.5	2,745.0
Percent	20.7	16.6	45.4	14.0	3.3	100.0

---

[1] See description of forest type and stand-size class under "Definition of Terms."

Table 4.--Net volume[1] of sawtimber by species and stand-size class, Mountain Region, 1957

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Shortleaf pine	93.2	247.2	209.7	16.1	3.5	569.7
Virginia pine	19.3	95.8	60.0	0.4	--	175.5
Total	112.5	343.0	269.7	16.5	3.5	745.2
White pine	236.2	152.1	37.1	2.6	--	428.0
Hemlock	342.7	39.3	10.7	--	--	392.7
Redcedar	--	21.6	2.1	--	--	23.7
Total sftwds.	691.4	556.0	319.6	19.1	3.5	1,589.6
Hardwoods:						
Blackgum	70.9	50.2	18.5	3.2	0.6	143.4
Yellow-poplar	552.3	224.7	83.6	7.8	--	868.4
Soft maple	71.1	37.5	23.6	5.2	--	137.4
Basswood-cucumber	179.6	71.8	32.6	1.9	--	285.9
Other soft hdwds.	150.9	17.8	35.2	--	2.4	206.3
Total	1,024.8	402.0	193.5	18.1	3.0	1,641.4
White oak	356.2	291.4	151.5	7.4	1.9	808.4
Other white oaks	657.8	398.8	269.8	17.8	6.3	1,350.5
Northern red oak	550.1	186.2	76.0	0.4	--	812.7
Other red oaks	557.7	405.8	194.4	13.3	6.6	1,177.8
Hickory	549.6	222.9	120.5	29.1	1.4	923.5
Ash	40.2	11.9	12.2	--	--	64.3
Hard maple	105.9	36.2	14.7	2.7	--	159.5
Black walnut	48.3	36.1	11.6	2.3	2.2	100.5
Other hard hdwds.	154.1	48.5	33.9	1.5	9.5	247.5
Total	3,019.9	1,637.8	884.6	74.5	27.9	5,644.7
Total hdwds.	4,044.7	2,039.8	1,078.1	92.6	30.9	7,286.1
All species	4,736.1	2,595.8	1,397.7	111.7	34.4	8,875.7
Percent	53.4	29.2	15.7	1.3	0.4	100.0

[1] Log scale, International 1/4-inch rule.

[2] See "Definition of Terms" for species combined with others.

Table 5.--Net volume1/ of sawtimber by species and diameter class,
Mountain Region, 1957

Species	10-12 inches2/	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Shortleaf pine	299.5	226.1	44.1	--	569.7	6.4
Virginia pine	148.7	23.4	3.4	--	175.5	2.0
Total	448.2	249.5	47.5	--	745.2	8.4
White pine	141.1	174.2	105.3	7.4	428.0	4.8
Hemlock	43.2	75.3	95.7	178.5	392.7	4.4
Redcedar	17.7	6.0	--	--	23.7	0.3
Total sftwds.	650.2	505.0	248.5	185.9	1,589.6	17.9
Hardwoods:						
Blackgum	24.0	74.7	32.7	12.0	143.4	1.6
Yellow-poplar	196.3	472.5	140.6	59.0	868.4	9.8
Soft maple	51.4	67.7	18.3	--	137.4	1.6
Basswood-cucumber	72.5	182.0	31.4	--	285.9	3.2
Other soft hdwds.	35.6	104.2	44.6	21.9	206.3	2.3
Total	379.8	901.1	267.6	92.9	1,641.4	18.5
White oak	169.0	432.5	171.8	35.1	808.4	9.1
Other white oaks	319.9	674.0	273.4	83.2	1,350.5	15.2
Northern red oak	108.8	419.2	219.3	65.4	812.7	9.2
Other red oaks	334.0	644.3	149.3	50.2	1,177.8	13.3
Hickory	234.0	522.1	132.6	34.8	923.5	10.4
Ash	18.5	37.7	8.1	--	64.3	0.7
Hard maple	26.2	86.8	27.2	19.3	159.5	1.8
Black walnut	24.2	68.6	7.7	--	100.5	1.1
Other hard hdwds.	49.9	131.8	58.4	7.4	247.5	2.8
Total	1,284.5	3,017.0	1,047.8	295.4	5,644.7	63.6
Total hdwds.	1,664.3	3,918.1	1,315.4	388.3	7,286.1	82.1
All species	2,314.5	4,423.1	1,563.9	574.2	8,875.7	100.0
Percent	26.1	49.8	17.6	6.5	100.0	--

1/ Log scale, International 1/4-inch rule.

2/ Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5a.--Net volume[1] of sawtimber by species and diameter class, northern subregion, 1957

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Shortleaf pine	210.1	126.3	29.1	--	365.5	8.3
Virginia pine	105.5	18.0	3.4	--	126.9	2.9
Total	315.6	144.3	32.5	--	492.4	11.2
White pine	64.6	120.5	58.2	7.4	250.7	5.7
Hemlock	13.8	38.8	35.1	106.5	194.2	4.5
Redcedar	--	--	--	--	--	--
Total sftwds.	394.0	303.6	125.8	113.9	937.3	21.4
Hardwoods:						
Blackgum	6.7	20.8	12.1	12.0	51.6	1.2
Yellow-poplar	62.2	207.9	20.3	17.0	307.4	7.0
Soft maple	25.5	10.8	6.3	--	42.6	0.9
Basswood-cucumber	17.9	25.6	9.7	--	53.2	1.2
Other soft hdwds.	12.5	51.8	22.5	--	86.8	2.0
Total	124.8	316.9	70.9	29.0	541.6	12.3
White oak	98.1	287.4	108.0	18.8	512.3	11.7
Other white oaks	231.3	456.4	175.8	64.8	928.3	21.2
Northern red oak	39.4	161.1	69.2	6.7	276.4	6.3
Other red oaks	184.6	308.9	89.4	24.6	607.5	13.9
Hickory	103.9	243.9	51.7	--	399.5	9.1
Ash	6.6	18.0	--	--	24.6	0.6
Hard maple	9.6	41.5	5.6	--	56.7	1.3
Black walnut	17.1	33.5	--	--	50.6	1.1
Other hard hdwds.	11.4	36.9	--	--	48.3	1.1
Total	702.0	1,587.6	499.7	114.9	2,904.2	66.3
Total hdwds.	826.8	1,904.5	570.6	143.9	3,445.8	78.6
All species	1,220.8	2,208.1	696.4	257.8	4,383.1	100.0
Percent	27.8	50.4	15.9	5.9	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5b.--Net volume[1] of sawtimber by species and diameter class, southern subregion, 1957

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Shortleaf pine	89.4	99.8	15.0	--	204.2	4.5
Virginia pine	43.2	5.4	--	--	48.6	1.1
Total	132.6	105.2	15.0	--	252.8	5.6
White pine	76.5	53.7	47.1	--	177.3	4.0
Hemlock	29.4	36.5	60.6	72.0	198.5	4.4
Redcedar	17.7	6.0	--	--	23.7	0.5
Total sftwds.	256.2	201.4	122.7	72.0	652.3	14.5
Hardwoods:						
Blackgum	17.3	53.9	20.6	--	91.8	2.0
Yellow-poplar	134.1	264.6	120.3	42.0	561.0	12.5
Soft maple	25.9	56.9	12.0	--	94.8	2.1
Basswood-cucumber	54.6	156.4	21.7	--	232.7	5.2
Other soft hdwds.	23.1	52.4	22.1	21.9	119.5	2.7
Total	255.0	584.2	196.7	63.9	1,099.8	24.5
White oak	70.9	145.1	63.8	16.3	296.1	6.6
Other white oaks	88.6	217.6	97.6	18.4	422.2	9.4
Northern red oak	69.4	258.1	150.1	58.7	536.3	11.9
Other red oaks	149.4	335.4	59.9	25.6	570.3	12.7
Hickory	130.1	278.2	80.9	34.8	524.0	11.7
Ash	11.9	19.7	8.1	--	39.7	0.9
Hard maple	16.6	45.3	21.6	19.3	102.8	2.3
Black walnut	7.1	35.1	7.7	--	49.9	1.1
Other hard hdwds.	38.5	94.9	58.4	7.4	199.2	4.4
Total	582.5	1,429.4	548.1	180.5	2,740.5	61.0
Total hdwds.	837.5	2,013.6	744.8	244.4	3,840.3	85.5
All species	1,093.7	2,215.0	867.5	316.4	4,492.6	100.0
Percent	24.4	49.3	19.3	7.0	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1957

(In million board-feet)

MOUNTAIN REGION

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	57.9	224.6	130.8	8.1	--	421.4
Virginia pine	--	114.3	68.6	0.4	--	183.3
White pine	421.2	88.1	11.3	--	--	520.6
Total	479.1	427.0	210.7	8.5	--	1,125.3
Hardwood types:						
Oak-pine	63.3	85.2	89.5	1.0	--	239.0
Maple-beech-birch	64.0	19.1	5.7	--	0.2	89.0
Oak-hickory	4,039.5	2,064.5	1,090.8	102.2	34.2	7,331.2
Oak-gum-cypress	90.2	--	1.0	--	--	91.2
Total	4,257.0	2,168.8	1,187.0	103.2	34.4	7,750.4
All types	4,736.1	2,595.8	1,397.7	111.7	34.4	8,875.7
Percent	53.4	29.2	15.7	1.3	0.4	100.0

NORTHERN SUBREGION

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	35.4	127.2	95.4	3.5	--	261.5
Virginia pine	--	90.9	45.1	0.4	--	136.4
White pine	267.5	28.6	2.4	--	--	298.5
Total	302.9	246.7	142.9	3.9	--	696.4
Hardwood types:						
Oak-pine	49.2	27.4	74.3	1.0	--	151.9
Maple-beech-birch	9.7	--	--	--	--	9.7
Oak-hickory	1,699.5	1,126.9	573.6	46.7	9.0	3,455.7
Oak-gum-cypress	68.4	--	1.0	--	--	69.4
Total	1,826.8	1,154.3	648.9	47.7	9.0	3,686.7
All types	2,129.7	1,401.0	791.8	51.6	9.0	4,383.1
Percent	48.6	31.9	18.1	1.2	0.2	100.0

SOUTHERN SUBREGION

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	22.5	97.4	35.4	4.6	--	159.9
Virginia pine	--	23.4	23.5	--	--	46.9
White pine	153.7	59.5	8.9	--	--	222.1
Total	176.2	180.3	67.8	4.6	--	428.9
Hardwood types:						
Oak-pine	14.1	57.8	15.2	--	--	87.1
Maple-beech-birch	54.3	19.1	5.7	--	0.2	79.3
Oak-hickory	2,340.0	937.6	517.2	55.5	25.2	3,875.5
Oak-gum-cypress	21.8	--	--	--	--	21.8
Total	2,430.2	1,014.5	538.1	55.5	25.4	4,063.7
All types	2,606.4	1,194.8	605.9	60.1	25.4	4,492.6
Percent	58.0	26.6	13.5	1.3	0.6	100.0

---

[1] Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, Mountain Region, 1957

Log grade	10 - 14 inches[1]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
			YELLOW PINES			
Grade 1	--	--	--	--	--	--
Grade 2	10.6	1.8	61.0	38.3	71.6	9.6
Grade 3	472.1	80.6	62.4	39.1	534.5	71.7
Grade 4	103.1	17.6	36.0	22.6	139.1	18.7
Total	585.8	100.0	159.4	100.0	745.2	100.0
			OTHER SOFTWOODS			
Grade 1	--	--	29.3	5.3	29.3	3.5
Grade 2	--	--	34.2	6.2	34.2	4.0
Grade 3	249.0	85.2	379.3	68.7	628.3	74.4
Grade 4	43.3	14.8	109.3	19.8	152.6	18.1
Total	292.3	100.0	552.1	100.0	844.4	100.0
			SOFT HARDWOODS			
Grade 1	--	--	85.3	9.7	85.3	5.2
Grade 2	75.3	9.9	223.5	25.4	298.8	18.2
Grade 3	112.0	14.7	115.3	13.1	227.3	13.8
Grade 4	574.2	75.4	455.8	51.8	1,030.0	62.8
Total	761.5	100.0	879.9	100.0	1,641.4	100.0
			HARD HARDWOODS			
Grade 1	--	--	655.9	21.4	655.9	11.6
Grade 2	105.8	4.1	493.5	16.1	599.3	10.6
Grade 3	389.5	15.1	655.9	21.4	1,045.4	18.5
Grade 4	2,084.5	80.8	1,259.6	41.1	3,344.1	59.3
Total	2,579.8	100.0	3,064.9	100.0	5,644.7	100.0

[1] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 8.--Net volume[1] of all timber by species and stand-size class, Mountain Region, 1957

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Shortleaf pine	261	953	1,267	66	33	2,580
Virginia pine	101	425	1,041	5	6	1,578
Total	362	1,378	2,308	71	39	4,158
White pine	479	590	189	17	1	1,276
Hemlock	665	191	63	--	--	919
Redcedar	3	78	64	--	--	145
Total sftwds.	1,509	2,237	2,624	88	40	6,498
Hardwoods:						
Blackgum	226	198	177	30	2	633
Yellow-poplar	1,714	932	1,057	31	1	3,735
Soft maple	414	228	374	19	--	1,035
Basswood-cucumber	589	293	294	5	--	1,181
Other soft hdwds.	453	149	376	--	10	988
Total	3,396	1,800	2,278	85	13	7,572
White oak	1,151	1,504	1,389	37	6	4,087
Other white oaks	2,293	2,474	3,203	63	23	8,056
Northern red oak	1,632	745	896	44	--	3,317
Other red oaks	2,047	1,901	3,047	70	24	7,089
Hickory	2,197	1,105	1,317	107	5	4,731
Ash	256	141	93	--	--	490
Hard maple	374	237	143	10	1	765
Black walnut	154	156	159	49	8	526
Dogwood, holly	37	12	36	5	--	90
Other hard hdwds.	725	297	536	34	31	1,623
Total	10,866	8,572	10,819	419	98	30,774
Total hdwds.	14,262	10,372	13,097	504	111	38,346
All species	15,771	12,609	15,721	592	151	44,844
Percent	35.2	28.1	35.1	1.3	0.3	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	57	147	709	90	49	1,052
Hardwoods	3,267	2,269	5,662	759	336	12,293
Rotten culls	496	365	504	83	11	1,459
Total other material	3,820	2,781	6,875	932	396	14,804

---

[1] Sound wood and bark.

Table 9.--Net volume[1] of all timber by species and diameter class, Mountain Region, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine	242	516	550	542	631	99	2,580
Virginia pine	462	553	300	193	62	8	1,578
Total	704	1,069	850	735	693	107	4,158
White pine	104	246	172	199	360	195	1,276
Hemlock	36	97	54	84	174	474	919
Redcedar	62	34	25	14	10	--	145
Total sftwds.	906	1,446	1,101	1,032	1,237	776	6,498
Hardwoods:							
Blackgum	71	66	69	94	232	101	633
Yellow-poplar	373	550	623	566	1,197	426	3,735
Soft maple	240	189	182	183	194	47	1,035
Basswood-cucumber	103	100	237	206	465	70	1,181
Other soft hdwds.	60	188	168	136	288	148	988
Total	847	1,093	1,279	1,185	2,376	792	7,572
White oak	428	715	583	601	1,231	529	4,087
Other white oaks	1,264	1,525	1,178	1,176	1,977	936	8,056
Northern red oak	391	396	300	368	1,160	702	3,317
Other red oaks	1,050	1,333	1,257	1,128	1,835	486	7,089
Hickory	471	789	825	783	1,469	394	4,731
Ash	44	91	166	61	108	20	490
Hard maple	67	159	79	94	249	117	765
Black walnut	52	60	111	87	197	19	526
Dogwood, holly	67	23	--	--	--	--	90
Other hard hdwds.	334	236	315	186	378	174	1,623
Total	4,168	5,327	4,814	4,484	8,604	3,377	30,774
Total hdwds.	5,015	6,420	6,093	5,669	10,980	4,169	38,346
All species	5,921	7,866	7,194	6,701	12,217	4,945	44,844
Percent	13.2	17.5	16.0	15.0	27.3	11.0	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	218	232	269	164	116	53	1,052
Hardwoods	1,553	1,567	1,699	1,338	3,345	2,791	12,293
Rotten culls	153	173	257	56	320	500	1,459
Total other material	1,924	1,972	2,225	1,558	3,781	3,344	14,804

---

[1] Sound wood and bark.

Table 9a.--Net volume[1] of all timber by species and diameter class, northern subregion, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine	177	427	400	365	354	65	1,788
Virginia pine	346	350	208	138	48	8	1,098
Total	523	777	608	503	402	73	2,886
White pine	43	97	73	99	245	113	670
Hemlock	20	27	9	33	91	235	415
Redcedar	17	28	--	--	--	--	45
Total sftwds.	603	929	690	635	738	421	4,016
Hardwoods:							
Blackgum	38	38	40	26	66	53	261
Yellow-poplar	52	69	131	185	527	79	1,043
Soft maple	60	90	145	90	31	16	432
Basswood-cucumber	11	31	30	50	70	22	214
Other soft hdwds.	43	69	69	48	139	54	422
Total	204	297	415	399	833	224	2,372
White oak	251	403	378	350	817	324	2,523
Other white oaks	823	949	751	853	1,340	631	5,347
Northern red oak	221	198	217	134	452	189	1,411
Other red oaks	614	880	768	612	895	277	4,046
Hickory	239	356	251	348	684	125	2,003
Ash	23	54	92	23	50	--	242
Hard maple	26	62	40	34	122	15	299
Black walnut	24	21	55	61	94	--	255
Dogwood, holly	24	--	--	--	--	--	24
Other hard hdwds.	100	9	100	43	107	--	359
Total	2,345	2,932	2,652	2,458	4,561	1,561	16,509
Total hdwds.	2,549	3,229	3,067	2,857	5,394	1,785	18,881
All species	3,152	4,158	3,757	3,492	6,132	2,206	22,897
Percent	13.8	18.2	16.4	15.2	26.8	9.6	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	135	132	178	95	73	14	627
Hardwoods	831	718	762	676	1,712	1,173	5,872
Rotten culls	93	102	65	30	116	167	573
Total other material	1,059	952	1,005	801	1,901	1,354	7,072

---

[1] Sound wood and bark.

Table 9b.--Net volume[1] of all timber by species and diameter class, southern subregion, 1957

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine	65	89	150	177	277	34	792
Virginia pine	116	203	92	55	14	--	480
Total	181	292	242	232	291	34	1,272
White pine	61	149	99	100	115	82	606
Hemlock	16	70	45	51	83	239	504
Redcedar	45	6	25	14	10	--	100
Total sftwds.	303	517	411	397	499	355	2,482
Hardwoods:							
Blackgum	33	28	29	68	166	48	372
Yellow-poplar	321	481	492	381	670	347	2,692
Soft maple	180	99	37	93	163	31	603
Basswood-cucumber	92	69	207	156	395	48	967
Other soft hdwds.	17	119	99	88	149	94	566
Total	643	796	864	786	1,543	568	5,200
White oak	177	312	205	251	414	205	1,564
Other white oaks	441	576	427	323	637	305	2,709
Northern red oak	170	198	83	234	708	513	1,906
Other red oaks	436	453	489	516	940	209	3,043
Hickory	232	433	574	435	785	269	2,728
Ash	21	37	74	38	58	20	248
Hard maple	41	97	39	60	127	102	466
Black walnut	28	39	56	26	103	19	271
Dogwood, holly	43	23	--	--	--	--	66
Other hard hdwds.	234	227	215	143	271	174	1,264
Total	1,823	2,395	2,162	2,026	4,043	1,816	14,265
Total hdwds.	2,466	3,191	3,026	2,812	5,586	2,384	19,465
All species	2,769	3,708	3,437	3,209	6,085	2,739	21,947
Percent	12.6	16.9	15.7	14.6	27.7	12.5	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	83	100	91	69	43	39	425
Hardwoods	722	849	937	662	1,633	1,618	6,421
Rotten culls	60	71	192	26	204	333	886
Total other material	865	1,020	1,220	757	1,880	1,990	7,732

---

[1] Sound wood and bark.

Table 10.--Net volume[1] of all timber by species and class of material,

Mountain Region, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine	1,282	540	758	2,580	364	10
Virginia pine	414	149	1,015	1,578	524	10
Total	1,696	689	1,773	4,158	888	20
White pine	788	138	350	1,276	42	4
Hemlock	608	178	133	919	103	2
Redcedar	35	14	96	145	19	12
Total sftwds.	3,127	1,019	2,352	6,498	1,052	38
Hardwoods:						
Blackgum	301	126	206	633	436	50
Yellow-poplar	1,726	463	1,546	3,735	249	26
Soft maple	303	121	611	1,035	800	108
Basswood-cucumber	617	124	440	1,181	175	59
Other soft hdwds.	402	170	416	988	510	28
Total	3,349	1,004	3,219	7,572	2,170	271
White oak	1,632	729	1,726	4,087	817	85
Other white oaks	2,835	1,254	3,967	8,056	4,142	208
Northern red oak	1,622	608	1,087	3,317	703	106
Other red oaks	2,423	1,026	3,640	7,089	1,092	110
Hickory	1,875	771	2,085	4,731	762	82
Ash	134	55	301	490	64	2
Hard maple	331	129	305	765	344	79
Black walnut	214	89	223	526	77	15
Dogwood, holly	--	--	90	90	79	2
Scrub oak[2]	--	--	--	--	349	23
Other hard hdwds.	529	209	885	1,623	1,694	438
Total	11,595	4,870	14,309	30,774	10,123	1,150
Total hdwds.	14,944	5,874	17,528	38,346	12,293	1,421
All species	18,071	6,893	19,880	44,844	13,345	1,459
Percent	40.3	15.4	44.3	100.0	90.1	9.9

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 10a.--Net volume[1] of all timber by species and class of material, northern subregion, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine	845	339	604	1,788	239	10
Virginia pine	288	114	696	1,098	310	6
Total	1,133	453	1,300	2,886	549	16
White pine	450	80	140	670	26	--
Hemlock	300	68	47	415	34	--
Redcedar	--	--	45	45	18	12
Total sftwds.	1,883	601	1,532	4,016	627	28
Hardwoods:						
Blackgum	106	39	116	261	131	17
Yellow-poplar	621	170	252	1,043	72	11
Soft maple	94	43	295	432	215	17
Basswood - cucumber	116	26	72	214	46	4
Other soft hdwds.	169	72	181	422	146	20
Total	1,106	350	916	2,372	610	69
White oak	1,038	453	1,032	2,523	519	51
Other white oaks	1,948	876	2,523	5,347	2,618	130
Northern red oak	548	227	636	1,411	354	46
Other red oaks	1,243	541	2,262	4,046	665	59
Hickory	810	347	846	2,003	338	30
Ash	53	20	169	242	40	1
Hard maple	120	51	128	299	87	22
Black walnut	107	48	100	255	41	--
Dogwood, holly	--	--	24	24	15	--
Scrub oak[2]	--	--	--	--	187	21
Other hard hdwds.	104	46	209	359	398	116
Total	5,971	2,609	7,929	16,509	5,262	476
Total hdwds.	7,077	2,959	8,845	18,881	5,872	545
All species	8,960	3,560	10,377	22,897	6,499	573
Percent	39.1	15.6	45.3	100.0	91.9	8.1

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 10b.--Net volume[1] of all timber by species and class of material, southern subregion, 1957

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine	437	201	154	792	125	--
Virginia pine	126	35	319	480	214	4
Total	563	236	473	1,272	339	4
White pine	338	58	210	606	16	4
Hemlock	308	110	86	504	69	2
Redcedar	35	14	51	100	1	--
Total sftwds.	1,244	418	820	2,482	425	10
Hardwoods:						
Blackgum	195	87	90	372	305	33
Yellow-poplar	1,105	293	1,294	2,692	177	15
Soft maple	209	78	316	603	585	91
Basswood-cucumber	501	98	368	967	129	55
Other soft hdwds.	233	98	235	566	364	8
Total	2,243	654	2,303	5,200	1,560	202
White oak	594	276	694	1,564	298	34
Other white oaks	887	378	1,444	2,709	1,524	78
Northern red oak	1,074	381	451	1,906	349	60
Other red oaks	1,180	485	1,378	3,043	427	51
Hickory	1,065	424	1,239	2,728	424	52
Ash	81	35	132	248	24	1
Hard maple	211	78	177	466	257	57
Black walnut	107	41	123	271	36	15
Dogwood, holly	--	--	66	66	64	2
Scrub oak[2]	--	--	--	--	162	2
Other hard hdwds.	425	163	676	1,264	1,296	322
Total	5,624	2,261	6,380	14,265	4,861	674
Total hdwds.	7,867	2,915	8,683	19,465	6,421	876
All species	9,111	3,333	9,503	21,947	6,846	886
Percent	41.5	15.2	43.3	100.0	88.5	11.5

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, Mountain Region, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	234	939	993	43	--	2,209
Virginia pine	--	525	1,083	10	7	1,625
White pine	980	457	133	5	--	1,575
Total	1,214	1,921	2,209	58	7	5,409
Hardwood types:						
Oak-pine	253	524	1,213	7	--	1,997
Maple-beech-birch	219	67	84	--	3	373
Oak-hickory	13,758	10,097	12,174	522	141	36,692
Oak-gum-cypress	327	--	41	5	--	373
Total	14,557	10,688	13,512	534	144	39,435
All types	15,771	12,609	15,721	592	151	44,844
Percent	35.2	28.1	35.1	1.3	0.3	100.0
OTHER MATERIAL						
Softwood types:						
Shortleaf pine	23	184	383	23	12	625
Virginia pine	--	75	386	45	39	545
White pine	78	96	43	--	19	236
Total	101	355	812	68	70	1,406
Hardwood types:						
Oak-pine	31	49	434	60	--	574
Maple-beech-birch	84	63	98	--	7	252
Oak-hickory	3,568	2,314	5,468	790	316	12,456
Oak-gum-cypress	36	--	63	14	3	116
Total	3,719	2,426	6,063	864	326	13,398
All types	3,820	2,781	6,875	932	396	14,804
Percent	25.8	18.8	46.4	6.3	2.7	100.0

[1] Sound wood and bark.

Table 11a.--Net volume[1] of all timber by forest type and stand-size class, northern subregion, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	149	583	775	14	--	1,521
Virginia pine	--	394	640	10	7	1,051
White pine	600	121	28	--	--	749
Total	749	1,098	1,443	24	7	3,321
Hardwood types:						
Oak-pine	212	219	985	7	--	1,423
Maple-beech-birch	46	--	10	--	--	56
Oak-hickory	5,817	5,727	5,957	260	61	17,822
Oak-gum-cypress	262	--	8	5	--	275
Total	6,337	5,946	6,960	272	61	19,576
All types	7,086	7,044	8,403	296	68	22,897
Percent	30.9	30.8	36.7	1.3	0.3	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	20	122	267	6	12	427
Virginia pine	--	52	246	21	25	344
White pine	61	64	--	--	--	125
Total	81	238	513	27	37	896
Hardwood types:						
Oak-pine	27	9	379	12	--	427
Maple-beech-birch	26	--	7	--	--	33
Oak-hickory	1,446	1,216	2,516	230	266	5,674
Oak-gum-cypress	36	--	--	3	3	42
Total	1,535	1,225	2,902	245	269	6,176
All types	1,616	1,463	3,415	272	306	7,072
Percent	22.9	20.7	48.3	3.8	4.3	100.0

[1] Sound wood and bark.

Table 11b.--Net volume[1] of all timber by forest type and stand-size class, southern subregion, 1957

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Shortleaf pine	85	356	218	29	--	688
Virginia pine	--	131	443	--	--	574
White pine	380	336	105	5	--	826
Total	465	823	766	34	--	2,088
Hardwood types:						
Oak-pine	41	305	228	--	--	574
Maple-beech-birch	173	67	74	--	3	317
Oak-hickory	7,941	4,370	6,217	262	80	18,870
Oak-gum-cypress	65	--	33	--	--	98
Total	8,220	4,742	6,552	262	83	19,859
All types	8,685	5,565	7,318	296	83	21,947
Percent	39.6	25.4	33.3	1.3	0.4	100.0
OTHER MATERIAL						
Softwood types:						
Shortleaf pine	3	62	116	17	--	198
Virginia pine	--	23	140	24	14	201
White pine	17	32	43	--	19	111
Total	20	117	299	41	33	510
Hardwood types:						
Oak-pine	4	40	55	48	--	147
Maple-beech-birch	58	63	91	--	7	219
Oak-hickory	2,122	1,098	2,952	560	50	6,782
Oak-gum-cypress	--	--	63	11	--	74
Total	2,184	1,201	3,161	619	57	7,222
All types	2,204	1,318	3,460	660	90	7,732
Percent	28.5	17.0	44.8	8.5	1.2	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, Mountain Region, 1957

(In million cubic feet)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Shortleaf pine	15.9	34.4	38.2	40.7	50.8	8.3	188.3
Virginia pine	29.1	36.9	21.2	15.0	5.0	0.7	107.9
Total	45.0	71.3	59.4	55.7	55.8	9.0	296.2
White pine	7.3	18.4	13.4	16.9	31.6	18.3	105.9
Hemlock	2.8	6.6	4.4	7.2	15.7	45.9	82.6
Redcedar	4.4	2.4	1.9	1.3	0.9	--	10.9
Total sftwds.	59.5	98.7	79.1	81.1	104.0	73.2	495.6
Hardwoods:							
Blackgum	4.2	4.3	5.0	7.2	18.5	8.3	47.5
Yellow-poplar	25.0	35.7	44.5	43.1	95.3	35.3	278.9
Soft maple	16.5	11.8	13.3	13.9	15.7	3.8	75.0
Basswood-cucumber	6.3	6.4	16.6	15.9	37.3	5.8	88.3
Other soft hdwds.	4.8	11.2	12.4	10.4	23.1	12.0	73.9
Total	56.8	69.4	91.8	90.5	189.9	65.2	563.6
White oak	27.9	46.0	42.7	44.6	98.6	43.6	303.4
Other white oaks	76.6	98.8	86.0	87.8	157.8	77.8	584.8
Northern red oak	24.0	25.0	22.6	27.6	93.3	57.9	250.4
Other red oaks	63.0	86.5	92.4	84.9	144.8	40.2	511.8
Hickory	30.2	51.2	60.0	60.2	115.4	32.4	349.4
Ash	3.4	5.8	11.8	5.0	8.4	1.6	36.0
Hard maple	5.0	10.3	6.1	7.0	20.1	9.7	58.2
Black walnut	3.3	3.8	8.1	6.5	15.9	1.6	39.2
Dogwood, holly	4.1	1.5	--	--	--	--	5.6
Other hard hdwds.	26.1	14.4	23.3	13.6	30.7	14.3	122.4
Total	263.6	343.3	353.0	337.2	685.0	279.1	2,261.2
Total hdwds.	320.4	412.7	444.8	427.7	874.9	344.3	2,824.8
All species	379.9	511.4	523.9	508.8	978.9	417.5	3,320.4
Percent	11.4	15.4	15.8	15.3	29.5	12.6	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	12.7	15.7	19.0	12.7	9.5	5.0	74.6
Hardwoods	94.1	102.4	122.4	101.7	268.3	230.7	919.6
Rotten culls	10.7	13.0	17.9	7.3	24.7	41.6	115.2
Total other material	117.5	131.1	159.3	121.7	302.5	277.3	1,109.4

[1] Excludes bark.

Table 13.--Net volume[1] of all timber by species and class of material, Mountain Region, 1957

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Shortleaf pine	98.7	39.3	50.3	188.3	25.5	0.7
Virginia pine	31.2	10.7	66.0	107.9	35.5	0.7
Total	129.9	50.0	116.3	296.2	61.0	1.4
White pine	70.5	9.7	25.7	105.9	3.4	0.3
Hemlock	57.3	15.9	9.4	82.6	8.9	0.2
Redcedar	3.5	0.6	6.8	10.9	1.3	0.9
Total sftwds.	261.2	76.2	158.2	495.6	74.6	2.8
Hardwoods:						
Blackgum	24.5	9.5	13.5	47.5	33.9	4.1
Yellow-poplar	138.8	34.9	105.2	278.9	18.5	2.3
Soft maple	23.6	9.8	41.6	75.0	57.4	7.7
Basswood-cucumber	48.6	10.4	29.3	88.3	13.4	4.8
Other soft hdwds.	32.2	13.3	28.4	73.9	37.6	2.3
Total	267.7	77.9	218.0	563.6	160.8	21.2
White oak	129.3	57.5	116.6	303.4	63.9	6.6
Other white oaks	224.3	99.1	261.4	584.8	313.3	16.8
Northern red oak	129.1	49.7	71.6	250.4	55.3	8.5
Other red oaks	191.5	78.4	241.9	511.8	80.6	8.4
Hickory	149.1	58.9	141.4	349.4	55.4	6.4
Ash	10.8	4.2	21.0	36.0	4.6	0.2
Hard maple	26.7	10.1	21.4	58.2	26.0	6.1
Black walnut	17.1	6.9	15.2	39.2	5.9	1.3
Dogwood, holly	--	--	5.6	5.6	5.0	0.3
Scrub oak[2]	--	--	--	--	23.5	2.2
Other hard hdwds.	41.2	17.4	63.8	122.4	125.3	34.4
Total	919.1	382.2	959.9	2,261.2	758.8	91.2
Total hdwds.	1,186.8	460.1	1,177.9	2,824.8	919.6	112.4
All species	1,448.0	536.3	1,336.1	3,320.4	994.2	115.2
Percent	43.6	16.2	40.2	100.0	89.6	10.4

[1] Excludes bark.

[2] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, Mountain Region, 1957

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Shortleaf pine					
Softwood	2,657	2,392	570	136	1,021
Hardwood	235	220	31	--	79
Virginia pine					
Softwood	--	2,392	312	6	522
Hardwood	--	771	129	--	184
White pine					
Softwood	10,836	2,684	469	--	4,814
Hardwood	1,496	303	--	--	628
Oak-pine					
Softwood	1,302	1,027	253	25	389
Hardwood	2,989	1,053	226	--	460
Maple-beech-birch					
Softwood	51	--	--	--	22
Hardwood	3,086	1,921	381	80	1,832
Oak-hickory					
Softwood	288	188	48	24	122
Hardwood	4,419	2,537	540	224	1,700
Oak-gum-cypress					
Softwood	50	--	--	--	18
Hardwood	4,840	--	87	--	1,745
All types					
Softwood	716	579	129	30	309
Hardwood	4,187	2,125	437	165	1,417

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, Mountain Region, 1957

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees
Shortleaf pine										
Softwood	7.1	0.1	9.2	0.6	3.7	0.9	0.6	0.3	4.6	0.7
Hardwood	4.5	1.0	1.8	1.5	0.9	0.9	0.2	0.3	1.1	1.0
Virginia pine										
Softwood	--	--	9.5	1.6	5.0	1.6	0.1	0.8	4.3	1.4
Hardwood	--	--	5.0	0.4	2.0	0.9	0.1	0.4	1.9	0.7
White pine										
Softwood	20.9	0.5	13.6	0.1	2.2	0.5	0.6	0.4	12.2	0.4
Hardwood	7.8	1.8	1.9	3.1	3.4	1.3	--	2.0	4.2	2.1
Oak-pine										
Softwood	6.8	0.3	3.7	(2/)	2.3	0.7	0.2	0.6	2.5	0.6
Hardwood	10.3	1.8	9.1	1.2	4.2	1.6	(2/)	0.9	4.6	1.4
Maple-beech-birch										
Softwood	0.4	--	--	--	--	--	--	--	0.2	--
Hardwood	10.3	4.1	6.7	6.3	5.7	6.6	1.0	2.4	7.6	5.3
Oak-hickory										
Softwood	0.6	(2/)	0.7	0.1	0.3	0.1	0.1	0.1	0.4	0.1
Hardwood	15.4	4.1	12.6	3.0	6.2	2.9	1.1	1.9	8.7	3.0
Oak-gum-cypress										
Softwood	0.2	--	--	--	--	--	--	--	0.1	--
Hardwood	17.6	2.0	--	--	3.7	5.7	0.2	0.8	7.2	2.2
All types										
Softwood	1.6	0.1	2.3	0.2	1.1	0.3	0.2	0.2	1.3	0.2
Hardwood	14.8	3.9	10.8	2.7	5.3	2.5	0.8	1.6	7.5	2.7

1/ Sound wood and bark.

2/ Less than 0.05 cord per acre.

Table 16.--Number of trees[1] by species group, diameter class, and quality, Mountain Region, 1957

(In thousand trees)

D.b.h. class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All trees
			SOUND TREES		
2	71,554	39,980	182,655	656,032	950,221
4	44,506	23,046	77,521	304,594	449,667
6	23,595	7,948	27,753	125,208	184,504
8	16,271	6,270	13,811	69,284	105,636
10	7,811	2,307	9,382	38,656	58,156
12	4,057	1,700	5,413	22,448	33,618
14	1,525	762	3,366	13,785	19,438
16	566	544	1,434	6,890	9,434
18	128	248	980	4,362	5,718
20	95	265	413	2,056	2,829
22	45	109	197	1,159	1,510
24	--	102	50	568	720
26	--	22	30	265	317
28	--	31	50	127	208
30+	--	87	19	145	251
Total	170,153	83,421	323,074	1,245,579	1,822,227
			CULL TREES		
2	25,324	8,024	236,506	834,771	1,104,625
4	10,039	2,016	26,920	185,463	224,438
6	8,066	1,293	13,449	57,754	80,562
8	3,985	526	4,804	27,621	36,936
10	2,540	201	4,329	16,630	23,700
12	874	208	1,698	8,523	11,303
14	281	42	1,486	5,324	7,133
16	123	46	652	4,114	4,935
18	22	19	682	3,040	3,763
20	--	23	399	1,808	2,230
22	--	28	195	1,560	1,783
24	--	--	86	902	988
26	--	6	47	382	435
28	--	24	58	319	401
30+	--	--	26	270	296
Total	51,254	12,456	291,337	1,148,481	1,503,528

---

[1] All trees 1.0 inch d.b.h. or larger.

Table 17.--Stocking on commercial forest land by forest type and tree-size class, Mountain Region, 1957

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Shortleaf pine	4.1	71.1	157.6	150.2	383.0
Virginia pine	16.8	45.5	52.2	145.0	259.5
White pine	4.0	4.1	15.4	72.2	95.7
Oak-pine	--	49.1	79.7	152.8	281.6
Maple-beech-birch	1.0	7.1	11.1	28.8	48.0
Oak-hickory	84.7	615.1	1,396.0	1,927.7	4,023.5
Oak-gum-cypress	7.7	11.0	23.7	9.3	51.7
All types	118.3	803.0	1,735.7	2,486.0	5,143.0
Percent	2.3	15.6	33.8	48.3	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Shortleaf pine	139.6	205.9	30.6	6.9	383.0
Virginia pine	178.2	57.7	19.0	4.6	259.5
White pine	27.5	28.4	20.4	19.4	95.7
Oak-pine	162.6	106.5	6.7	5.8	281.6
Maple-beech-birch	17.7	25.1	5.2	--	48.0
Oak-hickory	1,690.9	1,769.4	493.9	69.3	4,023.5
Oak-gum-cypress	33.3	9.2	4.5	4.7	51.7
All types	2,249.8	2,202.2	580.3	110.7	5,143.0
Percent	43.7	42.8	11.3	2.2	100.0

Table 18.--Net annual growth by species group and unit of measure, Mountain Region, 1957

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
Yellow pines	25.8	11.5	179
Other softwoods	32.1	7.3	93
Soft hardwoods	98.5	30.9	458
Hard hardwoods	206.0	88.0	1,344
All species	362.4	137.7	2,074

Table 19.--Net annual growth percentages by species group and unit of measure, Mountain Region, 1957

Unit of measure	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	3.46	3.81	6.00	3.65	4.08
Cubic feet	3.89	3.63	5.48	3.89	4.14
Standard cords	4.30	3.97	6.05	4.37	4.62

Table 20.--Average annual timber cut by tree-size class and species group, Mountain Region

SAWTIMBER (In million board-feet)

Tree-size class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Small sawtimber	4.0	7.4	10.4	28.5	50.3
Large sawtimber	6.0	24.8	36.3	113.8	180.9
All trees	10.0	32.2	46.7	142.3	231.2
GROWING STOCK (In thousand cords)					
Pole trees	42	4	18	108	172
Small sawtimber	16	19	33	92	160
Large sawtimber	11	45	83	289	428
All trees	69	68	134	489	760
GROWING STOCK (In million cubic feet)					
Pole trees	2.5	0.3	1.1	6.5	10.4
Small sawtimber	1.2	1.7	2.5	6.9	12.3
Large sawtimber	1.0	4.3	6.8	23.7	35.8
All trees	4.7	6.3	10.4	37.1	58.5

Table 21.--Net annual change in volume by species group, Mountain Region, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	745.2	844.4	1,641.4	5,644.7	8,875.7
Total growth	32.0	38.4	106.7	247.8	424.9
Mortality	6.2	6.3	8.2	41.8	62.5
Net growth	25.8	32.1	98.5	206.0	362.4
Timber cut	10.0	32.2	46.7	142.3	231.2
Loss or gain	+15.8	-0.1	+51.8	+63.7	+131.2
Net volume, Dec. 31, 1957	761.0	844.3	1,693.2	5,708.4	9,006.9
Percent change	+2.1	0.0	+3.2	+1.1	+1.5

GROWING STOCK (In thousand cords)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	4,158	2,340	7,572	30,774	44,844
Total growth	208	108	483	1,515	2,314
Mortality	29	15	25	171	240
Net growth	179	93	458	1,344	2,074
Timber cut	69	68	134	489	760
Loss or gain	+110	+25	+324	+855	+1,314
Net volume, Dec. 31, 1957	4,268	2,365	7,896	31,629	46,158
Percent change	+2.6	+1.1	+4.3	+2.8	+2.9

GROWING STOCK (In million cubic feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	296.2	199.4	563.6	2,261.2	3,320.4
Total growth	13.6	8.5	32.9	101.0	156.0
Mortality	2.1	1.2	2.0	13.0	18.3
Net growth	11.5	7.3	30.9	88.0	137.7
Timber cut	4.7	6.3	10.4	37.1	58.5
Loss or gain	+6.8	+1.0	+20.5	+50.9	+79.2
Net volume, Dec. 31, 1957	303.0	200.4	584.1	2,312.1	3,399.6
Percent change	+2.3	+0.5	+3.6	+2.3	+2.4

Table 21a.--Net annual change in volume by species group, northern subregion, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	492.4	444.9	541.6	2,904.2	4,383.1
Total growth	21.3	18.0	34.6	125.1	199.0
Mortality	4.1	3.3	2.7	21.5	31.6
Net growth	17.2	14.7	31.9	103.6	167.4
Timber cut	8.7	6.0	20.9	72.2	107.8
Loss or gain	+8.5	+8.7	+11.0	+31.4	+59.6
Net volume, Dec. 31, 1957	500.9	453.6	552.6	2,935.6	4,442.7
Percent change	+1.7	+2.0	+2.0	+1.1	+1.4

GROWING STOCK (In thousand cords)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	2,886	1,130	2,372	16,509	22,897
Total growth	147	49	139	792	1,127
Mortality	20	7	8	91	126
Net growth	127	42	131	701	1,001
Timber cut	60	16	54	254	384
Loss or gain	+67	+26	+77	+447	+617
Net volume, Dec. 31, 1957	2,953	1,156	2,449	16,956	23,514
Percent change	+2.3	+2.3	+3.2	+2.7	+2.7

GROWING STOCK (In million cubic feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	204.3	97.7	176.2	1,191.9	1,670.1
Total growth	9.5	4.0	9.6	52.2	75.3
Mortality	1.4	0.6	0.7	6.8	9.5
Net growth	8.1	3.4	8.9	45.4	65.8
Timber cut	4.1	1.4	4.3	19.0	28.8
Loss or gain	+4.0	+2.0	+4.6	+26.4	+37.0
Net volume, Dec. 31, 1957	208.3	99.7	180.8	1,218.3	1,707.1
Percent change	+2.0	+2.0	+2.6	+2.2	+2.2

Table 21b.--Net annual change in volume by species group, southern subregion, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	252.8	399.5	1,099.8	2,740.5	4,492.6
Total growth	10.7	20.4	72.1	122.7	225.9
Mortality	2.1	3.0	5.5	20.3	30.9
Net growth	8.6	17.4	66.6	102.4	195.0
Timber cut	1.3	26.2	25.8	70.1	123.4
Loss or gain	+7.3	-8.8	+40.8	+32.3	+71.6
Net volume, Dec. 31, 1957	260.1	390.7	1,140.6	2,772.8	4,564.2
Percent change	+2.9	-2.2	+3.7	+1.2	+1.6
GROWING STOCK (In thousand cords)					
Net volume, Jan. 1, 1957	1,272	1,210	5,200	14,265	21,947
Total growth	61	59	344	723	1,187
Mortality	9	8	17	80	114
Net growth	52	51	327	643	1,073
Timber cut	9	52	80	235	376
Loss or gain	+43	-1	+247	+408	+697
Net volume, Dec. 31, 1957	1,315	1,209	5,447	14,673	22,644
Percent change	+3.4	-0.1	+4.8	+2.9	+3.2
GROWING STOCK (In million cubic feet)					
Net volume, Jan. 1, 1957	91.9	101.7	387.4	1,069.3	1,650.3
Total growth	4.1	4.5	23.3	48.8	80.7
Mortality	0.7	0.6	1.3	6.2	8.8
Net growth	3.4	3.9	22.0	42.6	71.9
Timber cut	0.6	4.9	6.1	18.1	29.7
Loss or gain	+2.8	-1.0	+15.9	+24.5	+42.2
Net volume, Dec. 31, 1957	94.7	100.7	403.3	1,093.8	1,692.5
Percent change	+3.0	-1.0	+4.1	+2.3	+2.6

Table 22.--Average annual change in volume per acre by stand size and forest type, Mountain Region, 1957

Stand size and forest type	Sawtimber (in board-feet)				Growing stock (in standard cords)			
	Growth	Mortality	Timber cut[1]	Net change	Growth	Mortality	Timber cut[1]	Net change
Sawtimber stands:								
Yellow pine	136	11	125	0	0.50	0.06	0.54	-0.10
White pine	286	88	394	-196	.82	.16	.87	-.21
Oak-pine	134	17	71	+46	.62	.05	.27	+.30
Oak-hickory[2]	154	28	118	+8	.53	.08	.33	+.12
All types	156	29	131	-4	.54	.08	.37	+.09
Poletimber stands:								
Yellow pine	28	3	8	+17	.37	.06	.08	+.23
White pine	39	--	--	+39	.55	--	--	+.55
Oak-pine	35	--	9	+26	.48	.02	.10	+.36
Oak-hickory[2]	38	5	10	+23	.44	.02	.05	+.37
All types	37	4	9	+24	.43	.02	.06	+.35
Other stands:								
Yellow pine	1	12	14	-25	.03	.04	.07	-.08
White pine	--	--	--	--	.04	--	--	+.04
Oak-pine	2	--	--	+2	.01	--	--	+.01
Oak-hickory[2]	27	3	5	+19	.08	.04	.02	+.02
All types	21	4	6	+11	.07	.04	.02	+.01
All stands:								
Yellow pine	46	7	41	-2	.33	.05	.20	+.08
White pine	200	57	253	-110	.69	.10	.56	+.03
Oak-pine	50	5	25	+20	.44	.03	.13	+.28
Oak-hickory[2]	83	14	53	+16	.42	.05	.16	+.21
All types	79	14	56	+9	.42	.05	.18	+.19

[1] Excludes timber removed in clearing land.

[2] Includes volume in maple-beech-birch and oak-gum-cypress types.

Table 23.--County area by broad use class, 1957

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alleghany	288.6	37.5	0.6	30.4	220.1	76.4
Augusta	631.0	278.5	0.1	63.0	289.4	45.9
Bath	345.6	42.0	0.8	46.7	256.1	74.3
Bland	236.2	64.3	--	5.8	166.1	70.3
Botetourt	351.4	96.5	0.8	26.7	227.4	64.9
Buchanan	325.1	47.8	--	--	277.3	85.3
Carroll	318.7	159.4	2.2	6.0	151.1	47.7
Clarke	111.3	75.2	0.9	--	35.2	31.9
Craig	215.0	42.8	--	13.2	159.0	74.0
Dickenson	214.4	27.3	--	1.4	185.7	86.6
Floyd	245.1	133.5	--	2.4	109.2	44.6
Frederick	276.5	130.5	0.2	1.8	144.0	52.1
Giles	232.3	64.3	2.2	8.3	157.5	68.4
Grayson	291.2	150.6	1.9	5.4	133.3	46.1
Highland	266.3	69.9	--	9.7	186.7	70.1
Lee	280.3	136.3	0.1	16.1	127.8	45.6
Montgomery	252.8	96.0	0.5	2.9	153.4	60.8
Page	202.2	72.7	0.6	46.8	82.1	40.7
Pulaski	217.6	95.7	9.7	6.3	105.9	50.9
Roanoke	176.6	67.7	--	2.6	106.3	60.2
Rockbridge	386.6	133.4	0.6	27.4	225.2	58.3
Rockingham	556.2	246.9	1.9	78.0	229.4	41.4
Russell	309.1	165.1	0.7	--	143.3	46.5
Scott	345.0	151.1	1.2	5.0	187.7	54.6
Shenandoah	324.5	138.2	0.5	18.3	167.5	51.7
Smyth	278.4	115.8	0.1	4.0	158.5	57.0
Tazewell	334.1	144.8	--	0.3	189.0	56.6
Warren	140.2	55.5	1.1	14.0	69.6	50.0
Washington	370.6	197.3	2.4	0.5	170.4	46.3
Wise	265.6	64.1	0.4	13.5	187.6	70.7
Wythe	294.4	144.9	1.3	7.0	141.2	48.2
Entire Region	9,082.9	3,445.6	30.8	463.5	5,143.0	56.8

[1] Gross area from the Bureau of the Census, 1950. Excludes independent cities.

Table 24.--Ownership of commercial forest land by county, 1957

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alleghany	116.6	53.0	101.3	--	--	2.2	103.5	47.0
Augusta	149.6	51.7	139.5	--	0.1	0.2	139.8	48.3
Bath	128.3	50.1	127.8	--	--	(1/)	127.8	49.9
Bland	146.5	88.2	19.0	--	0.6	--	19.6	11.8
Botetourt	163.0	71.7	52.7	--	--	11.7	64.4	28.3
Buchanan	277.3	100.0	--	--	--	(1/)	(1/)	--
Carroll	146.0	96.6	4.3	--	--	0.8	5.1	3.4
Clarke	35.0	99.4	--	(1/)	(1/)	0.2	0.2	0.6
Craig	60.2	37.9	98.8	--	--	(1/)	98.8	62.1
Dickenson	177.1	95.4	8.6	--	--	--	8.6	4.6
Floyd	109.2	100.0	--	--	(1/)	--	(1/)	--
Frederick	141.3	98.1	2.7	--	--	(1/)	2.7	1.9
Giles	108.1	68.6	48.2	--	1.2	(1/)	49.4	31.4
Grayson	121.6	91.2	11.6	--	--	0.1	11.7	8.8
Highland	139.1	74.5	47.6	--	--	--	47.6	25.5
Lee	118.7	92.9	9.0	--	--	0.1	9.1	7.1
Montgomery	135.6	88.4	14.8	0.8	2.2	(1/)	17.8	11.6
Page	64.2	78.2	17.9	--	--	--	17.9	21.8
Pulaski	73.6	69.5	16.9	0.2	15.0	0.2	32.3	30.5
Roanoke	96.2	90.5	1.6	0.1	6.8	1.6	10.1	9.5
Rockbridge	173.1	76.9	46.1	--	0.3	5.7	52.1	23.1
Rockingham	126.3	55.1	101.4	--	--	1.7	103.1	44.9
Russell	143.2	99.9	--	--	(1/)	0.1	0.1	0.1
Scott	157.4	83.9	30.3	--	--	--	30.3	16.1
Shenandoah	110.0	65.7	57.5	--	--	(1/)	57.5	34.3
Smyth	99.2	62.6	59.1	--	0.1	0.1	59.3	37.4
Tazewell	184.0	97.4	5.0	--	--	(1/)	5.0	2.6
Warren	63.7	91.5	4.2	1.7	--	--	5.9	8.5
Washington	153.9	90.3	16.2	0.3	(1/)	(1/)	16.5	9.7
Wise	159.1	84.8	26.9	--	--	1.6	28.5	15.2
Wythe	94.0	66.6	45.3	--	(1/)	1.9	47.2	33.4
Entire Region	3,971.1	77.2	1,114.3	3.1	26.3	28.2	1,171.9	22.8

1/ Less than 50 acres.

Table 25.--Net volume[1] of sawtimber by county and species group, 1957

(In million board-feet)

County	Softwoods[2]	Yellow-poplar, basswood, and cucumber[3]	Oaks and other hard hardwoods	All species
Alleghany	42.1	1.7	167.8	211.6
Augusta	57.8	17.3	356.7	431.8
Bath	77.3	14.1	303.2	394.6
Bland	36.8	19.6	153.7	210.1
Botetourt	115.6	124.0	281.3	520.9
Buchanan	16.2	205.7	240.5	462.4
Carroll	105.7	21.8	168.5	296.0
Clarke	9.5	28.5	25.5	63.5
Craig	55.9	30.9	132.8	219.6
Dickenson	7.7	141.9	258.0	407.6
Floyd	49.3	36.0	75.6	160.9
Frederick	24.2	19.0	208.4	251.6
Giles	12.1	26.7	168.9	207.7
Grayson	14.9	16.7	159.7	191.3
Highland	87.2	33.6	293.6	414.4
Lee	19.1	42.0	113.3	174.4
Montgomery	34.7	26.8	110.1	171.6
Page	26.5	10.6	94.5	131.6
Pulaski	59.5	13.8	26.5	99.8
Roanoke	41.9	17.4	47.2	106.5
Rockbridge	120.4	137.2	357.2	614.8
Rockingham	234.1	52.3	371.9	658.3
Russell	4.0	85.7	156.1	245.8
Scott	46.2	86.9	132.2	265.3
Shenandoah	41.1	25.8	217.1	284.0
Smyth	39.6	46.3	165.7	251.6
Tazewell	6.5	44.0	220.5	271.0
Warren	3.7	29.2	47.0	79.9
Washington	76.7	82.1	192.6	351.4
Wise	78.3	185.8	266.0	530.1
Wythe	45.0	18.0	132.6	195.6
Entire Region	1,589.6	1,641.4	5,644.7	8,875.7

[1] Log scale, International 1/4-inch rule.

[2] Includes white pine, hemlock, and redcedar.

[3] Includes other soft hardwoods.

Table 26.--Net volume[1] of sawtimber by county, broad species group, and diameter group, 1957

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Alleghany	37.9	4.2	--	61.4	64.4	43.7
Augusta	43.8	--	14.0	201.0	90.1	82.9
Bath	36.8	9.4	31.1	132.3	109.6	75.4
Bland	22.7	6.5	7.6	91.1	42.5	39.7
Botetourt	51.7	45.8	18.1	188.6	119.2	97.5
Buchanan	6.4	3.2	6.6	188.5	135.1	122.6
Carroll	43.5	11.3	50.9	101.0	56.5	32.8
Clarke	0.8	1.3	7.4	29.0	14.2	10.8
Craig	37.1	13.8	5.0	88.3	47.3	28.1
Dickenson	4.6	3.1	--	136.1	124.9	138.9
Floyd	49.3	--	--	65.3	29.4	16.9
Frederick	24.2	--	--	93.2	54.5	79.7
Giles	12.1	--	--	101.5	57.1	37.0
Grayson	14.9	--	--	95.6	70.1	10.7
Highland	46.1	35.1	6.0	175.2	105.1	46.9
Lee	19.1	--	--	73.3	52.5	29.5
Montgomery	32.5	2.2	--	63.7	49.3	23.9
Page	25.1	1.4	--	52.3	33.8	19.0
Pulaski	31.3	18.4	9.8	21.8	13.7	4.8
Roanoke	30.7	3.4	7.8	25.5	20.6	18.5
Rockbridge	72.2	29.7	18.5	240.2	184.8	69.4
Rockingham	77.6	24.7	131.8	198.6	147.7	77.9
Russell	2.2	1.8	--	94.1	75.9	71.8
Scott	5.9	--	40.3	94.5	77.7	46.9
Shenandoah	35.0	6.1	--	125.1	61.8	56.0
Smyth	24.4	12.0	3.2	106.6	59.2	46.2
Tazewell	6.5	--	--	95.4	52.6	116.5
Warren	3.7	--	--	52.1	15.4	8.7
Washington	39.4	20.3	17.0	127.1	87.0	60.6
Wise	2.8	16.2	59.3	149.0	144.5	158.3
Wythe	37.8	7.2	--	73.9	44.6	32.1
Entire Region	878.1	277.1	434.4	3,341.3	2,241.1	1,703.7

---

[1] Log scale, International 1/4-inch rule.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1957

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alleghany	109	25	23	13	51	--	526	401	1,148
Augusta	284	34	30	29	57	30	1,376	688	2,528
Bath	150	41	28	55	143	24	1,196	627	2,264
Bland	76	38	28	11	135	27	526	334	1,175
Botetourt	186	94	34	83	177	222	942	579	2,317
Buchanan	--	--	7	31	403	427	611	505	1,984
Carroll	85	6	135	121	157	36	678	335	1,553
Clarke	9	3	--	12	42	60	123	41	290
Craig	215	76	20	--	77	59	515	278	1,240
Dickenson	19	8	8	--	315	283	484	577	1,694
Floyd	45	--	206	24	118	66	180	136	775
Frederick	208	12	12	4	90	43	730	467	1,566
Giles	25	12	--	6	89	33	547	351	1,063
Grayson	2	--	24	14	38	47	610	336	1,071
Highland	135	30	78	83	155	57	1,033	627	2,198
Lee	8	--	36	6	144	73	398	244	909
Montgomery	155	22	89	6	110	43	492	247	1,164
Page	136	8	21	6	45	26	396	189	827
Pulaski	156	80	7	11	49	32	227	55	617
Roanoke	180	25	36	17	106	32	231	103	730
Rockbridge	194	48	65	107	106	290	931	792	2,533
Rockingham	277	54	88	262	150	106	928	821	2,686
Russell	2	3	6	2	189	159	329	345	1,035
Scott	19	--	28	72	259	172	363	289	1,202
Shenandoah	296	20	3	13	42	50	988	439	1,851
Smyth	90	46	25	8	175	85	580	316	1,325
Tazewell	13	10	2	4	215	78	547	479	1,348
Warren	32	5	8	--	74	58	472	70	719
Washington	118	40	39	69	266	145	602	429	1,708
Wise	5	10	15	132	363	375	644	621	2,165
Wythe	129	50	26	12	64	30	588	260	1,159
Entire Region	3,358	800	1,127	1,213	4,404	3,168	18,793	11,981	44,844

1/ Sound wood and bark.

Table 27.--Net volume[1] of all timber by county, species group, and diameter group, 1957 (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Alleghany	44	5	--	--	24	35	279	360	747
Augusta	104	--	20	14	24	61	322	392	937
Bath	26	--	--	7	35	40	482	323	913
Bland	31	--	5	4	11	21	93	219	384
Botetourt	25	5	12	5	18	3	151	185	404
Buchanan	2	5	--	--	66	129	322	537	1,061
Carroll	7	--	8	--	47	18	271	93	444
Clarke	5	2	--	--	10	3	50	21	91
Craig	52	--	--	--	5	27	208	207	499
Dickenson	--	--	--	--	12	58	129	220	419
Floyd	42	--	6	--	90	20	33	147	338
Frederick	23	--	--	--	4	--	89	92	208
Giles	19	6	3	25	72	33	213	219	590
Grayson	--	5	--	--	101	35	196	110	447
Highland	12	--	19	--	36	32	324	301	724
Lee	--	--	--	--	90	57	149	69	365
Montgomery	84	4	3	2	24	16	113	117	363
Page	30	--	7	--	3	--	31	49	120
Pulaski	47	--	1	--	70	25	53	21	217
Roanoke	36	6	--	--	18	33	100	72	265
Rockbridge	34	17	4	--	114	34	341	319	863
Rockingham	30	18	2	--	28	28	272	353	731
Russell	--	--	1	1	32	39	54	44	171
Scott	32	--	3	15	63	114	244	311	782
Shenandoah	69	13	--	--	15	13	196	147	453
Smyth	--	--	--	--	14	26	41	76	157
Tazewell	7	4	--	--	85	47	297	282	722
Warren	9	--	--	--	24	12	51	21	117
Washington	2	1	--	6	18	20	45	84	176
Wise	2	--	9	--	41	114	151	201	518
Wythe	35	8	--	--	44	110	229	152	578
Entire Region	809	99	103	79	1,238	1,203	5,529	5,744	14,804

---

[1] Sound wood and bark.

Table 28.--Average annual volume of sawtimber cut by county and species group[1]

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alleghany	0.2	1.2	--	3.9	5.3
Augusta	--	--	4.3	22.7	27.0
Bath	--	--	--	--	--
Bland	--	--	--	2.6	2.6
Botetourt	0.6	--	11.2	7.9	19.7
Buchanan	--	--	1.0	5.2	6.2
Carroll	0.6	16.2	--	1.4	18.2
Clarke	--	--	--	1.1	1.1
Craig	--	--	--	--	--
Dickenson	--	--	0.7	--	0.7
Floyd	0.3	5.0	1.3	7.0	13.6
Frederick	5.6	0.2	0.9	18.8	25.5
Giles	--	--	1.1	1.4	2.5
Grayson	--	2.6	13.7	5.7	22.0
Highland	--	--	--	2.8	2.8
Lee	--	--	--	--	--
Montgomery	--	--	--	--	--
Page	--	--	1.3	4.9	6.2
Pulaski	--	--	--	8.8	8.8
Roanoke	0.2	1.2	3.2	3.4	8.0
Rockbridge	0.2	--	--	2.6	2.8
Rockingham	--	--	--	1.1	1.1
Russell	--	--	1.5	4.4	5.9
Scott	--	1.2	2.8	5.7	9.7
Shenandoah	1.7	3.4	--	--	5.1
Smyth	0.4	1.2	1.8	0.9	4.3
Tazewell	--	--	1.6	20.1	21.7
Warren	0.2	--	--	3.0	3.2
Washington	--	--	0.3	5.2	5.5
Wise	--	--	--	0.4	0.4
Wythe	--	--	--	1.3	1.3
Entire Region	10.0	32.2	46.7	142.3	231.2

1/ Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 29.--Average annual volume of growing stock cut by county and species group 1/

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Alleghany	9	3	--	31	43
Augusta	--	--	10	66	76
Bath	1	--	--	1	2
Bland	--	--	--	9	9
Botetourt	4	--	26	31	61
Buchanan	--	--	5	15	20
Carroll	3	28	1	7	39
Clarke	--	--	--	3	3
Craig	5	2	--	4	11
Dickenson	--	--	2	--	2
Floyd	3	12	4	24	43
Frederick	14	1	3	55	73
Giles	--	--	4	8	12
Grayson	--	5	33	34	72
Highland	--	--	--	9	9
Lee	--	--	--	--	--
Montgomery	--	--	--	3	3
Page	--	--	4	16	20
Pulaski	--	--	--	21	21
Roanoke	3	4	11	9	27
Rockbridge	5	--	--	10	15
Rockingham	--	--	--	3	3
Russell	--	--	4	14	18
Scott	--	4	16	21	41
Shenandoah	17	6	--	1	24
Smyth	1	3	4	2	10
Tazewell	2	--	4	59	65
Warren	2	--	--	15	17
Washington	--	--	3	14	17
Wise	--	--	--	1	1
Wythe	--	--	--	3	3
Entire Region	69	68	134	489	760

1/ Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

> Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.
>
> White pine-hemlock type: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is white pine or hemlock.
>
> Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other associated hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Maple-beech-birch type: Upland hardwood forests in which 50 percent or more of the stand is sugar maple, beech, or yellow birch, singly or in combination, except where yellow pines make up 25 to 49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand. In the mountains, flat areas of forest bordering streams may be given this classification. River birch, sycamore, willow, and alder are characteristic of such areas.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedlings and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

> Softwood logs[1] must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.
>
> Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications[2] for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Species Groups

Yellow pines: Includes shortleaf, pitch, Table-Mountain, and Virginia pine.

Other softwoods: White pine, hemlock, spruce, fir, and eastern redcedar.

Soft hardwoods: Blackgum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, willow, elm, hackberry, sycamore, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, river birch, black walnut, black locust, honeylocust, mulberry, sourwood, dogwood, holly, and persimmon.

1/ For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

2/ For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Preliminary estimates of area by land-use class were based on examination of about 68,200 points systematically spaced on aerial photographs of the Virginia Mountain Region. Subsamples of 1,727 photo points classified as forest and 678 in other land uses were established as sample plots on the ground. These ground plots provided adjustments for changes in land use sin the date of photographs, and supplied detailed measurements and observations needed in evaluating forest conditions.

Forest area.--The sampling intensity of the 1957 survey provided an estimate of the total forest area with a standard error of ±0.6 percent. The probabilities were two out of three that the actual forest area was within ±0.6 percent of the estimated acreage. The standard error per million acres was ±1.4 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ±2.7 percent, or ±4.9 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ±3.6 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 2,758 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ±12.7 percent, or ±3.0 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data are as follows:

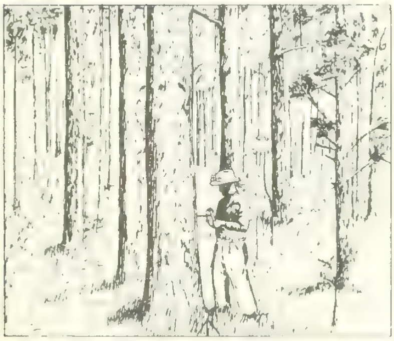
Item	Percent of error	
	Low	High
Forest area	±0.8	±6.6
Growing stock volume	±10.1	±18.4
Board-foot volume	±14.4	±24.7

HOW THE FOREST INVENTORY IS MADE

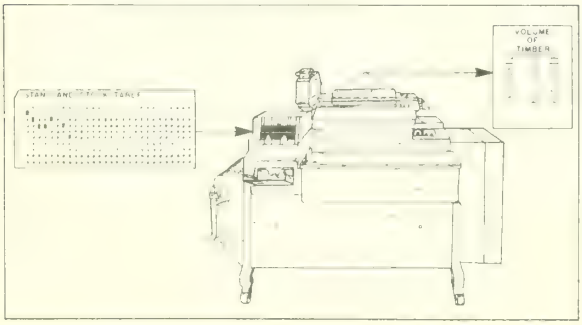
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
No. 26 - 1946 Commodity Drain by County from South Carolina Forests
No. 28 - South Carolina's Forest Resources, 1947
No. 30 - Forest Resources of Northeast Florida, 1949
No. 31 - Forest Resources of Central Florida, 1949
No. 32 - Forest Resources of Northwest Florida, 1949
No. 33 - Forest Resources of South Florida, 1949
No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
No. 36 - Forest Statistics for Florida, 1949
No. 37 - Forest Statistics for Southwest Georgia, 1951
No. 39 - Forest Statistics for Southeast Georgia, 1952
No. 40 - Forest Statistics for Central Georgia, 1952
No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952
No. 42 - Forest Statistics for North Central and North Georgia, 1953
No. 44 - Forest Statistics for Georgia, 1951-53
No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955 (out of print)
No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
No. 49 - North Carolina's Timber Supply, 1955
No. 50 - Forest Statistics for the Coastal Plain of Virginia, 1956
No. 51 - Forest Statistics for the Piedmont of Virginia, 1957

Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South
*No. 47 - 1955 Pulpwood Production in the South (out of print)
*No. 80 - 1956 Pulpwood Production in the South

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

---

*Published in cooperation with the Southern Forest Experiment Station, New Orleans, La.

Agriculture--Asheville

FOREST SURVEY RELEASE NO. 53

SEPTEMBER 1958

1957 PULPWOOD PRODUCTION IN THE SOUTH

CLEMSON COLLEGE LIBRARY
SEP 25 1958
AGRI. REF. DEPT.

by

J. F. McCormack
Division of Forest Economics Research

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, N. C.
and
SOUTHERN FOREST EXPERIMENT STATION
NEW ORLEANS, LA.
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
ATLANTA, GA.

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act. The Southeastern Forest Experiment Station, Asheville, North Carolina, is responsible for the work in Virginia, North Carolina, South Carolina, Georgia, and Florida. The Southern Forest Experiment Station, New Orleans, Louisiana, directs the work in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth and mortality. Determination of the current rate of timber growth, and the total loss resulting from fire, insects, disease, suppression, and other causes.

3. Timber cut. Determination of the amount of industrial and domestic wood used, and the amount removed by land-clearing and cultural operations.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

ACKNOWLEDGMENT

The statistics presented herein are based upon reports furnished by the wood procurement officials representing 76 mills located in or drawing wood from the South. Reports showed production either by county or by shipping points that were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

1957 PULPWOOD PRODUCTION IN THE SOUTH
(Forest Survey Release No. 53)

PLEASE NOTE:

Numbers used in figure 2 are in thousands of cords.

CONTENTS

Page

TEXT - 1

FIGURES:

1. Pulpmills drawing wood from the South, 1957 - - - - - - - - - - - - - - ii
2. Pulpwood production in the South, 1957 - - - - - - - - - - - - - - - - - - 3
3. Pine pulpwood production by county in the South, 1957 - - - - - - - - - 16
4. Hardwood pulpwood production by county in the South, 1957 - - - - - - 17

TABLES:

1. Round pulpwood production in the South by state and species group, 1956 and 1957 - 1
2. Wood residues produced for pulp manufacture by state, type, and species, 1957 - 2
3. Pulpwood production in Southeastern Station territory by State and Survey Unit, 1957 - 4
4. Pulpwood production in Southern Station territory by State and Survey Unit, 1957 - 4

ROUND PULPWOOD PRODUCTION, 1957:

5. In Alabama - 5
6. In Arkansas - 5
7. In Florida - 6
8. In Georgia - 7
9. In Louisiana - 8
10. In Mississippi - 9
11. In North Carolina - 10
12. In Oklahoma - 10
13. In South Carolina - 11
14. In Tennessee - 11
15. In Texas - 12
16. In Virginia - 13
17. Companies drawing pulpwood from the South, 1957 - - - - - - - - - - - 14
18. Pulpmills under construction or announced in the South - - - - - - - - 15

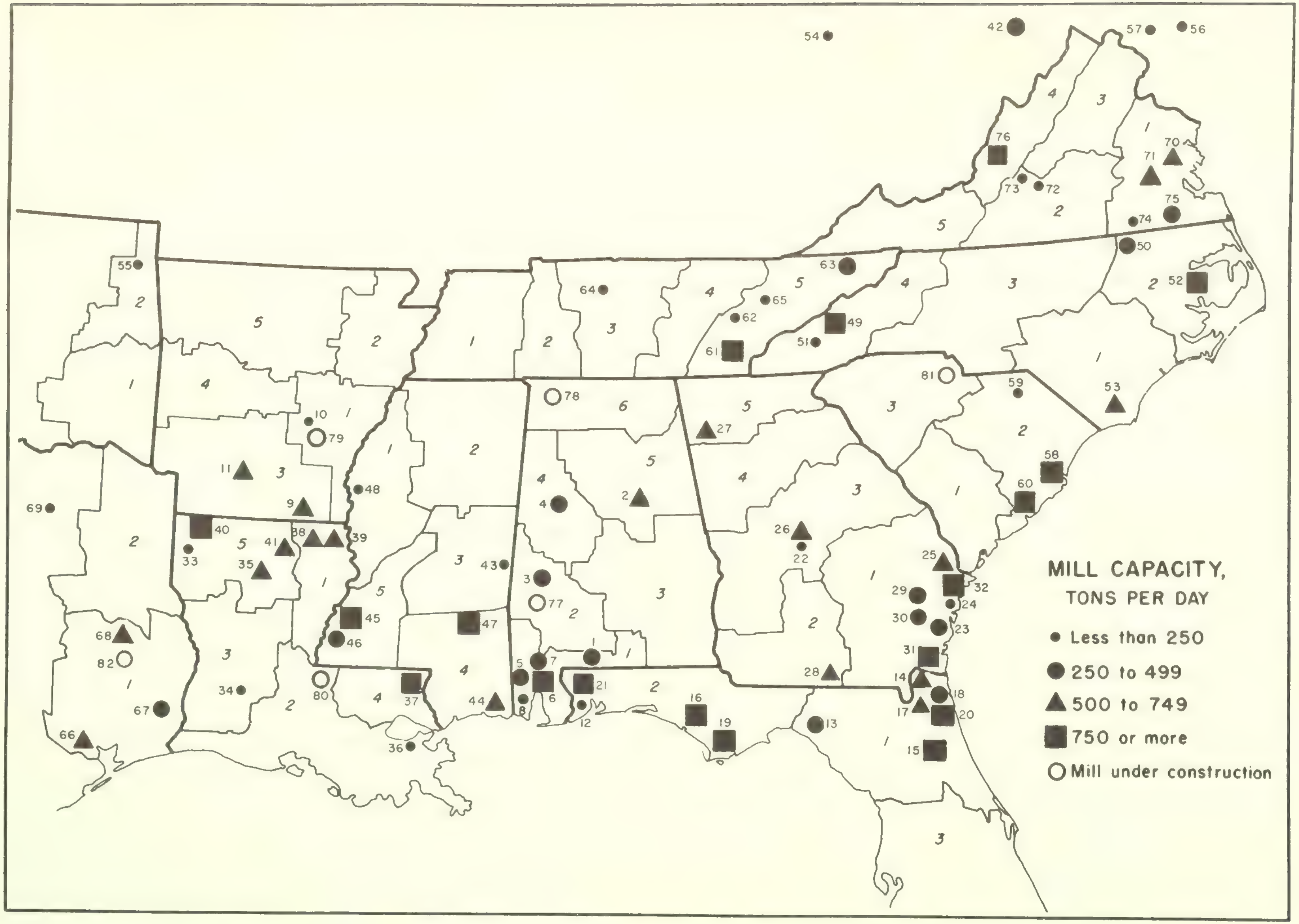


Figure 1.--Pulpmills drawing wood from the South, 1957. Numbered areas are Forest Survey regions. Small numbers at mill locations correspond to numbers in tables 17 and 18.

1957 PULPWOOD PRODUCTION IN THE SOUTH

J. F. McCormack

Southeastern Forest Experiment Station

Pulpwood production in southern states during 1957 fell slightly below the 1956 level, thus reversing a strong, long-term upward trend. Total production amounted to 19,782,600 cords, a decrease of 562,300 cords, or 2.8 percent, from the 1956 record high. At the same time, the combined pulping capacity of southern mills climbed from 38,000 tons per day in 1956 to 41,000 tons in 1957 as new mills and expanded productive equipment in existing mills went into operation.

The decline in 1957 production is associated with the current business recession. Similar trend effects were experienced in the recession years 1954 and 1949. As general business conditions improve, the amount of pulpwood used annually in the South can be expected to resume its upward trend.

Round pulpwood accounted for 18,579,600 cords, or 94 percent, of the total amount produced, and wood residues obtained from other manufacturing processes made up the remaining 1,203,000 cords. As indicated in Table 1, the production of roundwood was 5.6 percent below 1956, with all states except Alabama showing a decrease. The decline by states ranged from a slight decrease in Florida to a 20-percent drop in Oklahoma. The decline in roundwood production was balanced to some extent by increased use of wood residues.

Table 1.--Round pulpwood production in the South by State and species group, 1956 and 1957

State	Change from 1956	1957			1956		
		Total	Pine	Hardwood	Total	Pine	Hardwood
	Percent	- - - - - - - - - - -	Thousand cords	- - - - - - - - - - - - -			
Ala.	+ 1.5	2,134.4	1,997.2	137.2	2,103.0	2,001.3	101.7
Ark.	- 11.0	832.2	709.9	122.3	934.7	802.3	[illegible]
Fla.	- .2	1,947.4	1,921.4	26.0	1,950.7	1,950.0	.7
Ga.	- 2.0	3,773.3	3,543.3	230.0	3,849.9	3,665.0	184.9
La.	- 8.5	1,440.2	1,180.8	259.4	1,574.2	1,289.4	284.8
Miss.	- 3.5	1,995.8	1,105.9	889.9	2,069.0	1,191.2	877.8
N. C.	- 4.3	1,763.1	1,437.1	326.0	1,842.2	1,512.1	[illegible]
Okla.	- 20.3	59.4	51.3	8.1	74.5	68.5	6.0
S. C.	- 8.4	1,655.0	1,384.7	270.3	1,806.6	1,582.9	223.7
Tenn.	- 14.8	334.3	236.1	98.2	392.2	244.9	[illegible]
Tex.	- 16.0	1,226.2	1,065.7	160.5	1,459.0	[illegible]	119.8
Va.	- 13.0	1,418.3	1,080.2	338.1	1,629.7	1,273.2	356.5
All	- 5.6	18,579.6	15,713.6	2,866.0	19,685.7	[illegible]	[illegible]

Two trends are evident which are very favorable from the standpoint of timber supply and more efficient timber utilization. In recent years, the proportion of wood coming from hardwood species and from wood residues have both been increasing. Hardwood species, which made up 14.0 percent of the roundwood produced in 1956, accounted for 15.4 percent in 1957, a gain of about 100,000 cords. The increasing use of hardwoods in pulp manufacture has exhibited a slow but steady gain for the past several years. This is a desirable trend, because it shifts more of the production from the heavily used pine species to the more abundant hardwoods.

The use of coarse, chippable residues obtained from sawmills, veneer plants, and other sources has shown a much more striking increase. Chipping of this type of material has risen from 76,000 cords in 1953 to 1.2 million cords in 1957 (table 2). The average rate of use has doubled each year, and residues now comprise 6 percent of the total pulpwood production in the South. Production in 1957 was 83 percent above 1956, and it can be expected to go higher.

Table 2.--Wood residues produced for pulp manufacture by state, type, and species, 1957

(In thousand cords)

State	All types	Sawmill chips			Other residues[1]		
		Total	Pine	Hardwood	Total	Pine	Hardwood
Alabama	159.8	148.3	133.4	14.9	11.5	3.0	8.5
Arkansas	210.2	207.8	205.4	2.4	2.4	.8	1.6
Florida	50.1	48.5	48.1	.4	1.6	.8	.8
Georgia	85.7	74.9	69.0	5.9	10.8	1.4	9.4
Louisiana	124.0	122.0	113.0	9.0	2.0	.8	1.2
Mississippi	79.9	62.0	28.1	33.9	17.9	.3	17.6
North Carolina	102.7	86.9	82.8	4.1	15.8	2.5	13.3
South Carolina	88.0	77.9	76.2	1.7	10.1	.6	9.5
Tennessee	6.9	5.0	--	5.0	1.9	--	1.9
Texas[2]	195.6	195.1	194.7	.4	.5	.5	--
Virginia	100.1	97.0	97.0	--	3.1	--	3.1
All states	1,203.0	1,125.4	1,047.7	77.7	77.6	10.7	66.9

[1] Veneer cores, pole and piling trim, cull crossties, etc.

[2] Includes Oklahoma.

Production of chips from sawmill slabs and trim has been the basis for most of the increased use of wood residues. A number of sawmills have installed log debarkers to remove the bark before logs are sawn. The debarked slabs and edgings are then chipped and sent to the pulpmill. In other cases, slabs and trim are being collected from portable sawmill sites and concentrated at yards where the debarking and chipping are done. The volume of sawmill and veneer mill chips received at pulpmills accounted for 94 percent of all residues used, and pine residues made up 88 percent of the total.

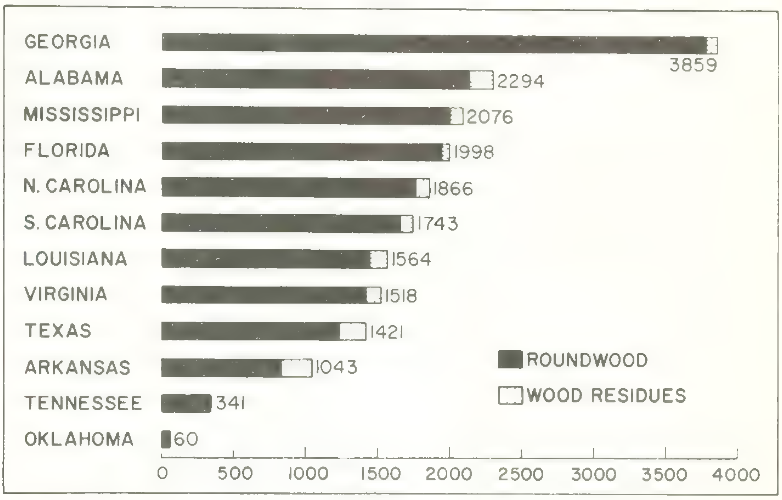


Fig. 2.--Pulpwood production in the South, 1957. Roundwood and residues combined.

The State of Georgia retained its lead in pulpwood production during 1957 by producing a total of 3.9 million cords (fig.2). Louisiana displaced Virginia as seventh of the twelve southern states in total volume of wood produced. The State of Arkansas led in production of wood residues. Eight individual counties, located in four different states, each produced over 100,000 cords of wood. The leader was Baldwin County, Alabama, with a volume of 169,500 cords. Production of pine pulpwood was concentrated in southeast Georgia and northeast Florida (fig. 3). These two areas furnished 17 percent of the round pine wood cut in the South. A similar map for hardwood pulpwood (fig. 4) shows concentrations of production in southern Mississippi, western North Carolina, and the central Mountain Region of Virginia.

The number of pulpmills operating within the twelve southern states during 1957 increased to 70, as two new mills went into operation in Alabama. These were the Container Corporation of America mill at Brewton, and the Gulf States Paper Corporation mill at Demopolis. Their combined production added 600 tons per day to the capacity of the industry. In January 1958 two other new mills went into production. They were the Dierks Paper Company mill at Pine Bluff, Arkansas, and the Rayonier mill at Jesup, Georgia. Plans for still another new mill were announced by the Tennessee River Pulp and Paper Company. The site will be at Sheffield, Alabama. The Mead Corporation mill at Nashville, Tennessee, was shut down in March 1958 because of economic conditions in the industry.

Table 3.--Pulpwood production in Southeastern Station territory by State and Survey unit, 1957

State	Forest Survey unit[1]	Species group: Pine	Species group: Hardwood	Total
	Number	- - - - Standard cords	- - - -	- - - -
Virginia	1	355,141	49,750	404,891
	2	421,049	72,083	493,132
	3	221,107	53,438	274,545
	4	72,217	141,363	213,580
	5	10,667	21,457	32,124
Roundwood		1,080,181	338,091	1,418,272
Wood residues[2]		97,028	3,131	100,159
All pulpwood		1,177,209	341,222	1,518,431
North Carolina	1	537,181	68,076	605,257
	2	274,954	37,594	312,548
	3	481,657	49,363	531,020
	4	143,304	170,987	314,291
Roundwood		1,437,096	326,020	1,763,116
Wood residues[2]		85,319	17,419	102,738
All pulpwood		1,522,415	343,439	1,865,854
South Carolina	1	249,524	74,765	324,289
	2	429,702	159,938	589,640
	3	705,441	35,634	741,075
Roundwood		1,384,667	270,337	1,655,004
Wood residues[2]		76,700	11,264	87,964
All pulpwood		1,461,367	281,601	1,742,968
Georgia	1	1,486,559	180,957	1,667,516
	2	434,721	24,812	459,533
	3	891,164	16,503	907,667
	4	560,856	450	561,306
	5	170,048	7,306	177,354
Roundwood		3,543,348	230,028	3,773,376
Wood residues[2]		70,375	15,259	85,634
All pulpwood		3,613,723	245,287	3,859,010
Florida	1	1,202,176	22,467	1,224,643
	2	508,717	3,350	512,067
	3	183,075	140	183,215
	4	27,454	--	27,454
Roundwood		1,921,422	25,957	1,947,379
Wood residues[2]		48,933	1,181	50,114
All pulpwood		1,970,355	27,138	1,997,493
Southeastern states				
Roundwood		9,366,714	1,190,433	10,557,147
Wood residues[2]		378,355	48,254	426,609
Total		9,745,069	1,238,687	10,983,756

[1] For location of Survey units, see Figure 1.

[2] Residues included in State totals only.

Table 4.--Pulpwood production in Southern Station territory by State and Survey unit, 1957

State	Forest Survey unit[1]	Species group: Pine	Species group: Hardwood	Total
	Number	- - - - Standard cords	- - - -	- - - -
Alabama	1	335,663	32,646	368,309
	2	320,604	33,747	354,351
	3	679,227	27,139	706,366
	4	232,120	11,631	243,751
	5	383,913	31,269	415,182
	6	45,663	745	46,408
Roundwood		1,997,190	137,177	2,134,367
Wood residues[2]		136,438	23,384	159,822
All pulpwood		2,133,628	160,561	2,294,189
Arkansas	1	14,100	17,461	31,561
	2	547	--	547
	3	549,906	98,061	647,967
	4	105,755	4,378	110,133
	5	39,579	2,411	41,990
Roundwood		709,887	122,311	832,198
Wood residues[2]		206,207	3,981	210,188
All pulpwood		916,094	126,292	1,042,386
Louisiana	1	28,043	71,657	99,700
	2	8,226	6,472	14,698
	3	324,577	41,200	365,777
	4	278,081	34,652	312,733
	5	541,884	105,431	647,315
Roundwood		1,180,811	259,412	1,440,223
Wood residues[2]		113,809	10,152	123,961
All pulpwood		1,294,620	269,564	1,564,184
Mississippi	1	12,676	102,080	114,756
	2	86,816	76,180	162,996
	3	390,500	283,326	673,826
	4	414,738	208,238	622,976
	[3] 5	201,115	220,092	421,207
Roundwood		1,105,845	889,916	1,995,761
Wood residues[2]		28,328	51,613	79,941
All pulpwood		1,134,173	941,529	2,075,702
Oklahoma[4]				
Roundwood		51,372	8,053	59,425
Wood residues		479	--	479
All pulpwood		51,851	8,053	59,904
Tennessee	1	9,721	524	10,245
	2	224	6,947	7,171
	3	137	12,652	12,789
	4	49,238	10,340	59,578
	5	176,791	67,713	244,504
Roundwood		236,111	98,176	334,287
Wood residues[2]		--	6,907	6,907
All pulpwood		236,111	105,083	341,194
Texas	1	605,625	127,573	733,198
	2	443,077	23,720	466,797
	3	16,988	9,235	26,223
Roundwood		1,065,690	160,528	1,226,218
Wood residues[2]		194,757	371	195,128
All pulpwood		1,260,447	160,899	1,421,346
Southern States				
Roundwood		6,346,906	1,675,573	8,022,479
Wood residues[2]		680,018	96,408	776,426
Total		7,026,924	1,771,981	8,798,905

[1] For location of Survey units, see Figure 1.

[2] Residues included in State totals only.

[3] Survey unit No. 5 has been added in Mississippi. Present Units No. 3 and No. 5 contain the same area as Unit No. 3 in the 1956 and earlier reports.

[4] All units.

Table 5.--Round pulpwood production in Alabama, 1957

(In standard cords)

County	Pine	Hardwood	Total
Autauga	12,754	919	13,673
Baldwin	156,519	12,949	169,468
Barbour	46,984	--	46,984
Bibb	27,972	2,892	30,864
Blount	8,161	145	8,306
Bullock	31,711	134	31,845
Butler	61,658	5,161	66,819
Calhoun	17,300	920	18,220
Chambers	25,329	929	26,258
Cherokee	18,639	2,635	21,274
Chilton	25,751	1,212	26,963
Choctaw	40,840	5,737	46,577
Clarke	56,569	7,165	63,734
Clay	40,711	3,858	44,569
Cleburne	28,259	1,689	29,948
Coffee	22,549	--	22,549
Colbert	1,379	19	1,398
Conecuh	38,463	3,880	42,343
Coosa	25,780	11,643	37,423
Covington	32,645	326	32,971
Crenshaw	23,151	2,444	25,595
Cullman	15,160	141	15,301
Dale	18,213	39	18,252
Dallas	23,984	1,802	25,786
De Kalb	9,744	685	10,429
Elmore	36,614	1,585	38,199
Escambia	34,463	3,127	37,590
Etowah	16,972	1,025	17,997
Fayette	29,042	196	29,238
Franklin	6,780	--	6,780
Geneva	11,091	--	11,091
Greene	24,026	781	24,807
Hale	14,184	1,447	15,631
Henry	22,519	17	22,536
Houston	6,725	--	6,725
Jackson	4,738	11	4,749
Jefferson	26,504	440	26,944
Lamar	13,747	82	13,829
Lauderdale	132	--	132
Lawrence	61	--	61
Lee	38,902	2,185	41,087
Limestone	3,426	--	3,426
Lowndes	55,295	3,455	58,750
Macon	33,648	53	33,701
Madison	2,857	--	2,857
Marengo	35,075	3,542	38,617
Marion	6,480	--	6,480
Marshall	8,480	18	8,498
Mobile	49,345	11,376	60,721
Monroe	76,218	5,492	81,710
Montgomery	26,423	2,336	28,759
Morgan	8,066	12	8,078
Perry	33,308	3,472	36,780
Pickens	32,875	768	33,643
Pike	34,401	--	34,401
Randolph	41,896	552	42,448
Russell	27,075	--	27,075
St. Clair	27,440	954	28,394
Shelby	57,626	4,417	62,043
Sumter	20,638	2,478	23,116
Talladega	27,089	2,852	[illegible]
Tallapoosa	85,685	4,503	90,188
Tuscaloosa	50,486	1,993	52,479
Walker	32,770	345	33,115
Washington	62,691	4,868	67,559
Wilcox	52,801	5,453	58,254
Winston	8,371	18	8,389
Total	1,997,190	137,177	2,134,367

Table 6.--Round pulpwood production in Arkansas, 1957

(In standard cords)

County	Pine	Hardwood	Total
Arkansas	--	-	--
Ashley	43,815	27,845	71,660
Baxter	636	25	661
Benton	--	--	-
Boone	75	--	75
Bradley	39,862	5,110	44,972
Calhoun	21,311	131	21,442
Carroll	--	--	--
Chicot	--	8,436	8,436
Clark	37,953	7,886	45,839
Clay	--	--	--
Cleburne	20	--	20
Cleveland	[illegible]	429	[illegible]
Columbia	47,420	5,672	[illegible]
Conway	789	13	802
Craighead	[illegible]	--	[illegible]
Crawford	409	18	[illegible]
Crittenden	--	--	--
Cross	--	--	--
Dallas	51,078	2,882	[illegible]
Desha	86	4,670	4,756
Drew	19,067	16,237	[illegible]
Faulkner	1,889	388	2,277
Franklin	1,465	196	1,661
Fulton	--	--	--
Garland	15,521	1,492	17,013
Grant	21,548	[illegible]	25,254
Greene	343	--	343
Hempstead	19,408	2,222	21,630
Hot Spring	20,461	793	21,254
Howard	9,802	1,211	11,013
Independence	4,279	77	4,356
Izard	--	--	--
Jackson	--	--	--
Jefferson	10,506	1,123	11,629
Johnson	9,824	833	10,657
Lafayette	12,306	5,909	18,215
Lawrence	--	--	--
Lee	--	1,736	1,736
Lincoln	3,311	107	3,418
Little River	12,103	1,026	13,129
Logan	11,820	22	11,842
Lonoke	16	--	16
Madison	--	--	--
Marion	--	--	--
Miller	13,315	192	13,507
Mississippi	--	--	--
Monroe	84	--	84
Montgomery	14,954	1,296	16,250
Nevada	15,575	1,858	[illegible]
Newton	425	--	425
Ouachita	31,967	6,654	38,621
Perry	9,314	186	9,500
Phillips	97	1,389	1,486
Pike	15,063	1,611	16,674
Poinsett	--	--	--
Polk	9,761	105	9,866
Pope	11,680	608	12,288
Prairie	--	--	--
Pulaski	8,952	466	9,418
Randolph	--	--	--
St. Francis	66	--	66
Saline	14,839	747	15,586
Scott	6,957	--	6,957
Searcy	43	13	[illegible]

Table 6.--Round pulpwood production in Arkansas, 1957 (continued)

(In standard cords)

County	Pine	Hardwood	Total
Sebastian	588	--	588
Sevier	23,028	439	23,467
Sharp	--	--	--
Stone	5	--	5
Union	85,279	6,248	91,527
Van Buren	--	--	--
Washington	--	--	--
White	8,040	240	8,280
Woodruff	--	--	--
Yell	13,049	64	13,113
Total	709,887	122,311	832,198

Table 7.--Round pulpwood production in Florida, 1957

(In standard cords)

County	Pine	Hardwood	Total
Alachua	46,304	595	46,899
Baker	86,824	--	86,824
Bay	20,602	--	20,602
Bradford	61,755	53	61,808
Brevard	18,043	--	18,043
Broward	--	--	--
Calhoun	35,655	--	35,655
Charlotte	3,678	--	3,678
Citrus	7,019	--	7,019
Clay	71,910	1,388	73,298
Collier	8,842	--	8,842
Columbia	65,172	1,130	66,302
Dade	1,011	--	1,011
De Soto	7,370	--	7,370
Dixie	33,595	3,300	36,895
Duval	54,604	1,100	55,704
Escambia	51,831	12	51,843
Flagler	78,486	--	78,486
Franklin	14,886	--	14,886
Gadsden	28,884	2,040	30,924
Gilchrist	12,912	--	12,912
Glades	2,996	--	2,996
Gulf	27,448	--	27,448
Hamilton	72,488	1,134	73,622
Hardee	7,739	--	7,739
Hendry	6,373	--	6,373
Hernando	8,221	105	8,326
Highlands	3,400	--	3,400
Hillsborough	25,877	--	25,877
Holmes	28,111	--	28,111
Indian River	114	--	114
Jackson	46,550	--	46,550
Jefferson	22,587	750	23,337
Lafayette	26,958	597	27,555
Lake	8,282	--	8,282
Lee	3,830	--	3,830
Leon	25,362	135	25,497
Levy	55,446	--	55,446
Liberty	24,288	--	24,288
Madison	41,346	2,000	43,346
Manatee	1,260	--	1,260
Marion	81,939	1,054	82,993
Martin	689	--	689
Monroe	--	--	--
Nassau	77,222	1,579	78,801
Okaloosa	21,049	--	21,049
Okeechobee	3,652	--	3,652
Orange	13,062	--	13,062
Osceola	16,652	--	16,652
Palm Beach	35	--	35
Pasco	10,306	35	10,341
Pinellas	105	--	105
Polk	20,610	--	20,610
Putnam	63,369	5,000	68,369
St. Johns	78,452	2,937	81,389
St. Lucie	704	--	704
Santa Rosa	82,669	5	82,674
Sarasota	8,678	--	8,678
Seminole	10,245	--	10,245
Sumter	11,736	--	11,736
Suwannee	36,250	100	36,350
Taylor	52,468	500	52,968
Union	42,610	--	42,610
Volusia	62,066	--	62,066
Wakulla	15,809	400	16,209
Walton	33,122	8	33,130
Washington	29,864	--	29,864
Total	1,921,422	25,957	1,947,379

Table 8.--Round pulpwood production in Georgia, 1957

(In standard cords)

County	Pine	Hardwood	Total
Appling	75,070	2,426	77,496
Atkinson	52,780	369	53,149
Bacon	33,694	1,285	34,979
Baker	8,030	--	8,030
Baldwin	18,913	684	19,597
Banks	4,386	--	4,386
Barrow	4,031	--	4,031
Bartow	18,413	2,348	20,761
Ben Hill	12,184	1,781	13,965
Berrien	41,238	1,851	43,089
Bibb	7,595	1,626	9,221
Bleckley	4,038	1,221	5,259
Brantley	69,969	5,235	75,204
Brooks	16,841	200	17,041
Bryan	51,301	15,016	66,317
Bulloch	24,949	2,800	27,749
Burke	15,020	367	15,387
Butts	27,116	70	27,186
Calhoun	4,837	--	4,837
Camden	76,234	25,320	101,554
Candler	6,256	800	7,056
Carroll	33,095	30	33,125
Catoosa	2,388	3	2,391
Charlton	77,123	4,511	81,634
Chatham	8,211	4,074	12,285
Chattahoochee	12,923	--	12,923
Chattooga	8,885	622	9,507
Cherokee	14,602	268	14,870
Clarke	2,366	--	2,366
Clay	9,398	--	9,398
Clayton	8,576	--	8,576
Clinch	99,905	295	100,200
Cobb	16,116	14	16,130
Coffee	59,481	1,921	61,402
Colquitt	37,078	909	37,987
Columbia	22,548	821	23,369
Cook	21,643	35	21,678
Coweta	40,246	--	40,246
Crawford	21,293	970	22,263
Crisp	8,010	150	8,160
Dade	1,115	101	1,216
Dawson	2,508	--	2,508
Decatur	54,590	6,159	60,749
De Kalb	6,232	--	6,232
Dodge	41,436	1,537	42,973
Dooly	13,522	62	13,584
Dougherty	14,259	--	14,259
Douglas	27,660	12	27,672
Early	7,816	464	8,280
Echols	42,419	11	42,430
Effingham	40,318	9,739	50,057
Elbert	24,015	--	24,015
Emanuel	40,361	1,272	41,633
Evans	6,612	50	6,662
Fannin	4,615	1,260	5,875
Fayette	7,304	--	7,304
Floyd	23,163	1,740	24,903
Forsyth	2,126	--	2,126
Franklin	13,717	--	13,717
Fulton	16,576	35	16,611
Gilmer	6,912	337	7,249
Glascock	2,550	--	2,550
Glynn	39,329	24,443	63,772
Gordon	20,520	327	20,847
Grady	24,969	1,773	26,742

Table 8.--Round pulpwood production in Georgia, 1957
(continued)

(In standard cords)

County	Pine	Hardwood	Total
Greene	56,493	1,000	57,493
Gwinnett	27,579	--	27,579
Habersham	8,806	--	8,806
Hall	15,372	--	15,372
Hancock	37,148	1,068	38,216
Haralson	10,699	176	10,875
Harris	41,221	100	41,321
Hart	7,310	--	7,310
Heard	7,958	--	7,958
Henry	29,373	50	29,423
Houston	19,259	466	19,725
Irwin	15,200	2,738	17,938
Jackson	13,830	16	13,846
Jasper	23,231	835	24,066
Jeff Davis	34,714	505	35,219
Jefferson	23,914	581	24,495
Jenkins	8,569	550	9,119
Johnson	7,844	405	8,249
Jones	45,355	817	46,172
Lamar	11,179	49	11,228
Lanier	10,157	250	10,407
Laurens	22,972	717	23,689
Lee	5,658	--	5,658
Liberty	24,043	18,693	42,736
Lincoln	10,006	--	10,006
Long	36,832	3,104	39,936
Lowndes	22,284	799	23,083
Lumpkin	2,302	--	2,302
McDuffie	12,662	250	12,912
McIntosh	26,075	25,575	51,650
Macon	11,718	144	11,862
Madison	8,760	--	8,760
Marion	9,168	--	9,168
Meriwether	40,652	--	40,652
Miller	12,303	--	12,303
Mitchell	32,667	2,267	34,934
Monroe	43,219	773	43,992
Montgomery	12,505	2,681	15,186
Morgan	15,435	--	15,435
Murray	5,812	37	5,849
Muscogee	8,981	--	8,981
Newton	36,040	20	36,060
Oconee	12,197	--	12,197
Oglethorpe	20,549	--	20,549
Paulding	24,652	--	24,652
Peach	8,094	426	8,520
Pickens	8,800	--	8,800
Pierce	104,315	2,646	106,961
Pike	10,108	--	10,108
Polk	15,081	97	15,178
Pulaski	4,573	115	4,688
Putnam	33,170	931	34,101
Quitman	8,933	--	8,933
Rabun	2,449	157	2,606
Randolph	11,301	--	11,301
Richmond	4,403	198	4,601
Rockdale	5,805	--	5,805
Schley	12,103	--	12,103
Screven	18,758	3,217	21,975
Seminole	18,801	1,313	20,114
Spalding	12,673	--	12,673
Stephens	11,849	--	11,849
Stewart	26,886	50	26,936
Sumter	19,949	300	20,249
Talbot	33,865	300	34,165

Table 8.--Round pulpwood production in Georgia, 1957
(continued)

County	Pine	Hardwood	Total
	(In standard cords)		
Taliaferro	7,431	16	7,447
Tattnall	45,982	3,929	49,911
Taylor	12,042	100	12,142
Telfair	42,545	1,574	44,119
Terrell	4,492	--	4,492
Thomas	29,360	2,526	31,886
Tift	8,360	818	9,178
Toombs	23,769	3,429	27,198
Towns	--	--	--
Treutlen	15,015	68	15,083
Troup	58,002	--	58,002
Turner	6,481	50	6,531
Twiggs	18,928	560	19,488
Union	2,867	--	2,867
Upson	30,451	108	30,559
Walker	6,120	106	6,226
Walton	7,878	--	7,878
Ware	88,022	646	88,668
Warren	15,896	50	15,946
Washington	25,727	150	25,877
Wayne	96,257	10,387	106,644
Webster	8,535	25	8,560
Wheeler	32,894	1,727	34,621
White	2,840	--	2,840
Whitfield	15,082	--	15,082
Wilcox	16,206	442	16,648
Wilkes	32,758	869	33,627
Wilkinson	26,382	463	26,845
Worth	16,981	225	17,206
Total	3,543,348	230,028	3,773,376

Table 9.--Round pulpwood production in Louisiana, 1957

County	Pine	Hardwood	Total
	(In standard cords)		
Acadia	3,537	14	3,551
Allen	32,671	1,583	34,254
Ascension	--	--	--
Assumption	--	556	556
Avoyelles	489	455	944
Beauregard	13,033	1,348	14,381
Bienville	57,859	6,439	64,298
Bossier	29,349	6,220	35,569
Caddo	13,782	12,084	25,866
Calcasieu	15,622	77	15,699
Caldwell	22,931	4,271	27,202
Cameron	--	--	--
Catahoula	9,835	5,312	15,147
Claiborne	52,399	5,300	57,699
Concordia	341	10,906	11,247
De Soto	50,750	1,038	51,788
East Baton Rouge	248	2,637	2,885
East Carroll	--	8,759	8,759
East Feliciana	14,976	9,467	24,443
Evangeline	13,314	487	13,801
Franklin	198	2,317	2,515
Grant	23,919	5,267	29,186
Iberia	--	--	--
Iberville	--	--	--
Jackson	46,587	1,932	48,519
Jefferson	1,808	--	1,808
Jefferson Davis	5,370	236	5,606
Lafayette	--	--	--
Lafourche	--	--	--
La Salle	26,386	5,948	32,334
Lincoln	39,514	5,491	45,005
Livingston	76,892	8,209	85,101
Madison	--	13,941	13,941
Morehouse	16,984	8,760	25,744
Natchitoches	59,121	14,283	73,404
Orleans	--	--	--
Ouachita	14,877	4,746	19,623
Plaquemines	--	--	--
Pointe Coupee	--	13	13
Rapides	38,997	9,478	48,475
Red River	12,158	4,652	16,810
Richland	15	280	295
Sabine	72,071	1,952	74,023
St. Bernard	--	--	--
St. Charles	--	--	--
St. Helena	14,905	1,607	16,512
St. James	--	--	--
St. John the Baptist	--	--	--
St. Landry	557	484	1,041
St. Martin	--	--	--
St. Mary	--	97	97
St. Tammany	44,143	350	44,493
Tangipahoa	51,301	10,139	61,440
Tensas	15	20,724	20,739
Terrebonne	--	--	--
Union	93,431	28,650	122,081
Vermilion	--	--	--
Vernon	24,073	541	24,614
Washington	75,616	2,243	77,859
Webster	26,097	9,334	35,431
West Baton Rouge	--	--	--
West Carroll	655	658	1,313
West Feliciana	1,835	4,853	6,688
Winn	82,150	15,274	97,424
Total	1,180,811	259,412	1,440,223

Table 10.--Round pulpwood production in Mississippi, 1957

(In standard cords)

County	Pine	Hardwood	Total
Adams	5,128	17,203	22,331
Alcorn	4,083	388	4,471
Amite	18,539	15,172	33,711
Attala	14,679	21,902	36,581
Benton	1,677	383	2,060
Bolivar	--	6,429	6,429
Calhoun	229	1,104	1,333
Carroll	2,227	11,091	13,318
Chickasaw	5,612	2,060	7,672
Choctaw	10,908	6,334	17,242
Claiborne	6,240	24,702	30,942
Clarke	46,332	33,724	80,056
Clay	381	98	479
Coahoma	--	4,698	4,698
Copiah	31,214	36,225	67,439
Covington	21,019	10,492	31,511
De Soto	--	--	--
Forrest	23,634	17,146	40,780
Franklin	34,094	16,577	50,671
George	16,013	1,901	17,914
Greene	24,615	15,545	40,160
Grenada	1,214	4,362	5,576
Hancock	44,741	1,010	45,751
Harrison	30,940	1,653	32,593
Hinds	12,325	24,224	36,549
Holmes	10,821	23,555	34,376
Humphreys	--	6,854	6,854
Issaquena	--	11,263	11,263
Itawamba	86	--	86
Jackson	40,534	268	40,802
Jasper	43,982	45,166	89,148
Jefferson	14,520	18,776	33,296
Jefferson Davis	14,687	5,187	19,874
Jones	17,942	35,371	53,313
Kemper	24,020	6,091	30,111
Lafayette	3,736	5,679	9,415
Lamar	12,923	7,159	20,082
Lauderdale	48,512	17,177	65,689
Lawrence	30,987	21,532	52,519
Leake	25,474	31,372	56,846
Lee	1,767	106	1,873
Leflore	161	1,644	1,805
Lincoln	29,987	22,299	52,286
Lowndes	3,774	2	3,776
Madison	6,431	11,283	17,714
Marion	25,356	26,901	52,257
Marshall	2,304	2,629	4,933
Monroe	3,447	292	3,739
Montgomery	2,688	8,187	10,875
Neshoba	20,696	20,176	40,872
Newton	35,021	18,303	53,324
Noxubee	11,427	706	12,133
Oktibbeha	10,799	7,238	18,037
Panola	14	4,833	4,847
Pearl River	24,899	15,850	40,749
Perry	21,909	14,326	36,235
Pike	33,830	19,156	52,986
Pontotoc	7,001	2,132	9,133
Prentiss	5,365	681	6,046
Quitman	--	3,188	3,188
Rankin	27,373	20,018	47,391
Scott	27,829	12,970	40,799
Sharkey	--	5,069	5,069
Simpson	21,167	24,758	45,925
Smith	26,217	21,139	47,356
Stone	17,330	9,070	26,400
Sunflower	--	18	18
Tallahatchie	297	4,378	4,675
Tate	60	1,577	1,637
Tippah	2,671	630	3,301
Tishomingo	6,840	174	7,014
Tunica	--	235	235
Union	2,544	788	3,332
Walthall	16,361	5,828	22,189
Warren	948	22,854	23,802
Washington	--	4,248	4,248
Wayne	30,848	18,999	49,847
Webster	4,367	5,193	9,560
Wilkinson	8,807	14,475	23,282
Winston	17,771	9,824	27,595
Yalobusha	3,022	10,219	13,241
Yazoo	449	7,647	8,096
Total	1,105,845	889,916	1,995,761

Table 11.--Round pulpwood production in North Carolina, 1957

(In standard cords)

County	Pine	Hardwood	Total
Alamance	10,378	562	10,940
Alexander	5,264	--	5,264
Allegnany	--	--	--
Anson	29,097	4,103	33,200
Ashe	--	39	39
Avery	--	1,071	1,071
Beaufort	25,667	1,383	27,050
Bertie	15,371	3,979	19,350
Bladen	46,264	7,854	54,118
Brunswick	50,354	5,023	55,377
Buncombe	27,338	44,377	71,715
Burke	16,565	3,665	20,230
Cabarrus	29,478	2,306	31,784
Caldwell	9,742	496	10,238
Camden	2,230	169	2,399
Carteret	29,397	333	29,730
Caswell	891	--	891
Catawba	6,471	53	6,524
Chatham	31,200	2,385	33,585
Cherokee	24,036	8,720	32,756
Chowan	1,323	1,691	3,014
Clay	--	--	--
Cleveland	6,624	53	6,677
Columbus	54,507	15,184	69,691
Craven	30,235	5,970	36,205
Cumberland	16,530	1,855	18,385
Currituck	--	--	—
Dare	--	--	--
Davidson	3,494	48	3,542
Davie	4,983	61	5,044
Duplin	40,735	2,686	43,421
Durham	13,022	634	13,656
Edgecombe	5,236	584	5,820
Forsyth	5,384	--	5,384
Franklin	43,220	7,470	50,690
Gaston	17,183	4,215	21,398
Gates	16,633	4,890	21,523
Graham	1,623	--	1,623
Granville	11,767	867	12,634
Greene	986	--	986
Guilford	11,375	160	11,535
Halifax	39,452	2,882	42,334
Harnett	10,798	2,685	13,483
Haywood	3,436	14,534	17,970
Henderson	8,037	14,943	22,980
Hertford	15,091	6,274	21,365
Hoke	1,824	257	2,081
Hyde	7,634	1,059	8,693
Iredell	12,139	585	12,724
Jackson	6,053	25,738	31,791
Johnston	18,992	4,356	23,348
Jones	31,050	844	31,894
Lee	16,312	1,519	17,831
Lenoir	17,295	668	17,963
Lincoln	10,085	289	10,374
McDowell	14,063	13,917	27,980
Macon	2,054	16,661	18,715
Madison	5,943	4,882	10,825
Martin	19,287	1,346	20,633
Mecklenburg	12,390	1,272	13,662
Mitchell	1,261	4,370	5,631
Montgomery	6,526	19	6,545
Moore	25,121	1,077	26,198
Nash	7,230	270	7,500
New Hanover	8,406	--	8,406
Northampton	12,994	3,627	16,621
Onslow	67,076	674	67,750
Orange	16,865	142	17,007
Pamlico	8,694	508	9,202
Pasquotank	124	68	192
Pender	42,276	8,545	50,821
Perquimans	1,057	69	1,126
Person	17,501	--	17,501
Pitt	5,995	83	6,078
Polk	5,031	11,758	16,789
Randolph	6,831	--	6,831
Richmond	19,992	3,127	23,119
Robeson	27,487	5,944	33,431
Rockingham	6,176	19	6,195
Rowan	3,794	37	3,831
Rutherford	26,285	7,697	33,982
Sampson	27,407	3,314	30,721
Scotland	6,704	1,124	7,828
Stanly	8,387	37	8,424
Stokes	1,164	--	1,164
Surry	36,835	--	36,835
Swain	7,338	2,751	10,089
Transylvania	4,272	14,084	18,356
Tyrrell	15,000	--	15,000
Union	15,496	604	16,100
Vance	7,391	251	7,642
Wake	32,866	2,603	35,469
Warren	26,064	1,133	27,197
Washington	8,000	1,278	9,278
Watauga	—	--	--
Wayne	7,065	1,340	8,405
Wilkes	11,208	13	11,221
Wilson	8,304	1,131	9,435
Yadkin	--	--	--
Yancey	335	726	1,061
Total	1,437,096	326,020	1,763,116

Table 12.--Round pulpwood production in Oklahoma, 1957

(In standard cords)

County	Pine	Hardwood	Total
Adair	592	--	592
Atoka	--	--	--
Choctaw	1,805	--	1,805
Haskell	951	--	951
Latimer	3,424	--	3,424
Le Flore	14,537	--	14,537
McCurtain	23,752	244	23,996
Mayes	--	7,809	7,809
Pushmataha	6,311	--	6,311
Total	51,372	8,053	59,425

Table 13.--Round pulpwood production in South Carolina, 1957

(In standard cords)

County	Pine	Hardwood	Total
Abbeville	34,506	177	34,683
Aiken	28,906	315	29,221
Allendale	17,228	4,974	22,202
Anderson	47,212	64	47,276
Bamberg	7,195	5,082	12,277
Barnwell	6,980	4,660	11,640
Beaufort	17,108	3,782	20,890
Berkeley	35,546	15,371	50,917
Calhoun	7,929	886	8,815
Charleston	39,899	15,553	55,452
Cherokee	16,384	--	16,384
Chester	52,151	2,554	54,705
Chesterfield	16,118	16,322	32,440
Clarendon	17,149	2,655	19,804
Colleton	43,931	13,783	57,714
Darlington	17,774	14,318	32,092
Dillon	13,476	2,715	16,191
Dorchester	30,734	15,674	46,408
Edgefield	36,920	3,871	40,791
Fairfield	103,856	4,171	108,027
Florence	28,730	5,650	34,380
Georgetown	86,752	35,560	122,312
Greenville	20,538	329	20,867
Greenwood	41,516	653	42,169
Hampton	30,927	10,543	41,470
Horry	27,738	1,377	29,115
Jasper	20,041	5,395	25,436
Kershaw	38,875	12,826	51,701
Lancaster	39,527	5,770	45,297
Laurens	41,621	545	42,166
Lee	10,386	6,083	16,469
Lexington	14,438	1,077	15,515
McCormick	30,242	--	30,242
Marion	10,989	3,378	14,367
Marlboro	7,185	6,112	13,297
Newberry	68,801	12,196	80,997
Oconee	31,002	1,223	32,225
Orangeburg	24,107	8,594	32,701
Pickens	8,963	856	9,819
Richland	37,145	14,102	51,247
Saluda	15,895	--	15,895
Spartanburg	39,806	1,256	41,062
Sumter	30,778	5,060	35,838
Union	39,639	1,280	40,919
Williamsburg	11,162	2,856	14,018
York	36,862	689	37,551
Total	1,384,667	270,337	1,655,004

Table 14.--Round pulpwood production in Tennessee, 1957

(In standard cords)

County	Pine	Hardwood	Total
Anderson	10,121	257	10,378
Bedford	--	139	139
Benton	26	11	37
Bledsoe	1,348	68	1,416
Blount	11,425	137	11,562
Bradley	6,876	963	7,839
Campbell	6,422	2,280	8,702
Cannon	--	6	6
Carroll	--	--	--
Carter	--	4,562	4,562
Cheatham	--	1,840	1,840
Chester	--	--	--
Claiborne	7,121	6,349	13,470
Clay	--	--	--
Cocke	14,532	1,398	15,930
Coffee	--	48	48
Crockett	--	--	--
Cumberland	5,824	2,687	8,511
Davidson	--	2,767	2,767
Decatur	78	39	117
De Kalb	--	--	--
Dickson	--	1,943	1,943
Dyer	--	--	--
Fayette	--	--	--
Fentress	7,233	102	7,335
Franklin	--	--	--
Gibson	--	--	--
Giles	--	3	3
Grainger	1,073	225	1,298
Greene	5,379	2,448	7,827
Grundy	2,705	--	2,705
Hamblen	1,503	4	1,507
Hamilton	9,216	86	9,302
Hancock	416	520	936
Hardeman	2,210	--	2,210
Hardin	100	--	100
Hawkins	4,829	11,535	16,364
Haywood	--	--	--
Henderson	7,511	--	7,511
Henry	--	4	4
Hickman	--	3,746	3,746
Houston	--	--	--
Humphreys	--	437	437
Jackson	137	--	137
Jefferson	356	--	356
Johnson	--	1,371	1,371
Knox	7,811	333	8,144
Lake	--	--	--
Lauderdale	--	--	--
Lawrence	--	--	--
Lewis	20	2,514	2,534
Lincoln	--	--	--
Loudon	1,278	334	1,612
McMinn	15,167	8,910	24,077
McNairy	--	--	--
Macon	--	63	63
Madison	--	520	520
Marion	1,818	--	1,818
Marshall	--	29	29
Maury	--	1,062	1,062
Meigs	5,645	1,917	7,562
Monroe	21,826	3,149	24,975
Montgomery	--	57	57
Moore	--	--	--
Morgan	7,602	[illegible]	11,896

Table 14.--Round pulpwood production in Tennessee, 1957
(continued)

(In standard cords)

County	Pine	Hardwood	Total
Obion	--	--	--
Overton	703	16	719
Perry	--	152	152
Pickett	--	--	--
Polk	16,345	1,036	17,381
Putnam	1,093	10	1,103
Rhea	6,736	723	7,459
Roane	3,581	1,345	4,926
Robertson	--	298	298
Rutherford	--	260	260
Scott	9,090	813	9,903
Sequatchie	2,602	--	2,602
Sevier	10,320	68	10,388
Shelby	--	--	--
Smith	--	--	--
Stewart	--	26	26
Sullivan	22	9,085	9,107
Sumner	--	1,042	1,042
Tipton	--	--	--
Trousdale	--	4	4
Unicoi	--	4,792	4,792
Union	6,663	285	6,948
Van Buren	554	--	554
Warren	1,660	70	1,730
Washington	8,550	5,981	14,531
Wayne	--	22	22
Weakley	--	--	--
White	584	--	584
Williamson	--	2,562	2,562
Wilson	--	16	16
Total	236,111	98,176	334,287

Table 15.--Round pulpwood production in Texas, 1957

(In standard cords)

County	Pine	Hardwood	Total
Anderson	12,523	3,100	15,623
Angelina	44,019	217	44,236
Austin	--	1,073	1,073
Bastrop	546	--	546
Bowie	15,561	--	15,561
Brazos	--	753	753
Burleson	--	753	753
Caldwell	--	--	--
Camp	4,668	53	4,721
Cass	33,383	644	34,027
Chambers	--	--	--
Cherokee	42,577	2,752	45,329
Childress	314	3	317
Colorado	391	234	625
Fayette	--	--	--
Fort Bend	--	137	137
Franklin	1,583	--	1,583
Gaines	--	--	--
Gregg	12,011	744	12,755
Grimes	12,360	3,484	15,844
Hall	20	--	20
Hardin	31,885	10,417	42,302
Harris	27,847	16,709	44,556
Harrison	40,036	1,842	41,878
Henderson	2,321	--	2,321
Hopkins	3	--	3
Houston	49,452	2,928	52,380
Jasper	55,629	13,520	69,149
Jefferson	2,243	771	3,014
Johnson	12	--	12
Lamar	39	--	39
Lee	--	--	--
Leon	868	--	868
Liberty	47,114	10,573	57,687
Madison	74	--	74
Marion	22,390	2,513	24,903
Montgomery	60,944	14,883	75,827
Morris	6,857	--	6,857
Nacogdoches	72,509	1,069	73,578
Newton	36,021	10,220	46,241
Orange	9,510	408	9,918
Panola	33,536	1,201	34,737
Polk	39,909	12,161	52,070
Red River	2,525	--	2,525
Rusk	39,002	1,762	40,764
Sabine	33,499	4,163	37,662
San Augustine	42,008	8,406	50,414
San Jacinto	11,076	3,258	14,334
Shelby	52,467	4,635	57,102
Smith	16,873	1,984	18,857
Terry	--	--	--
Titus	1,109	--	1,109
Trinity	39,974	2,576	42,550
Tyler	38,411	8,997	47,408
Upshur	26,690	1,421	28,111
Van Zandt	--	1,648	1,648
Walker	36,084	7,366	43,450
Waller	40	175	215
Wharton	--	975	975
Wood	6,777	--	6,777
Total	1,065,690	160,528	1,226,218

Table 16.--Round pulpwood production in Virginia, 1957

(In standard cords)

County	Pine	Hardwood	Total
Accomack	5,608	--	5,608
Albemarle	26,450	4,142	30,592
Alleghany	17,749	71,399	89,148
Amelia	17,371	1,986	19,357
Amherst	30,008	30,180	60,188
Appomattox	24,804	9,269	34,073
Arlington	7	--	7
Augusta	7,308	3,875	11,183
Bath	2,499	21,697	24,196
Bedford	39,195	13,751	52,946
Bland	5	--	5
Botetourt	7,220	11,044	18,264
Brunswick	36,269	5,704	41,973
Buchanan	--	--	--
Buckingham	40,586	24,031	64,617
Campbell	39,353	7,367	46,720
Caroline	21,103	281	21,384
Carroll	78	--	78
Charles City	11,041	1,947	12,988
Charlotte	24,569	1,611	26,180
Chesterfield	14,203	4,166	18,369
Clarke	178	--	178
Craig	4,073	5,780	9,853
Culpeper	6,262	4,356	10,618
Cumberland	22,523	2,027	24,550
Dickenson	--	--	--
Dinwiddie	21,571	4,984	26,555
Elizabeth City	5	--	5
Essex	6,543	344	6,887
Fairfax	4,606	333	4,939
Fauquier	4,314	131	4,445
Floyd	292	--	292
Fluvanna	13,770	3,307	17,077
Franklin	27,869	51	27,920
Frederick	6,713	973	7,686
Giles	7	227	234
Gloucester	13,212	695	13,907
Goochland	24,355	1,566	25,921
Grayson	--	--	--
Greene	3,851	16	3,867
Greensville	23,240	2,378	25,618
Halifax	19,756	463	20,219
Hanover	3,214	480	3,694
Henrico	5,149	147	5,296
Henry	26,062	--	26,062
Highland	249	5,156	5,405
Isle of Wight	6,247	2,405	8,652
James City	9,250	487	9,737
King and Queen	22,313	1,174	23,487
King George	825	328	1,153
King William	17,566	923	18,489
Lancaster	9,477	--	9,477
Lee	--	839	839
Loudoun	971	84	1,055
Louisa	22,537	788	23,325

Table 16.--Round pulpwood production in Virginia, 1957
(continued)

(In standard cords)

County	Pine	Hardwood	Total
Lunenburg	14,707	1,390	16,097
Madison	3,699	43	3,742
Mathews	1,650	869	2,519
Mecklenburg	16,807	1,356	18,163
Middlesex	7,886	415	8,301
Montgomery	4,940	--	4,940
Nansemond	4,609	3,335	7,944
Nelson	15,310	3,786	19,096
New Kent	15,439	1,023	16,462
Norfolk	4,215	458	4,673
Northampton	--	--	--
Northumberland	3,819	--	3,819
Nottoway	17,635	3,956	21,591
Orange	20,004	3,017	23,021
Page	975	40	1,015
Patrick	2,561	--	2,561
Pittsylvania	40,797	1,168	41,965
Powhatan	14,978	716	15,694
Prince Edward	26,129	2,660	28,789
Prince George	14,827	2,389	17,216
Prince William	27,315	218	27,533
Princess Anne	13	--	13
Pulaski	24	--	24
Rappahannock	--	--	--
Richmond	6,243	--	6,243
Roanoke	2,175	--	2,175
Rockbridge	9,781	19,622	29,403
Rockingham	7,133	1,396	8,529
Russell	--	426	426
Scott	206	16,096	16,302
Shenandoah	4,613	86	4,699
Smyth	--	26	26
Southampton	22,878	8,201	31,079
Spotsylvania	14,809	1,140	15,949
Stafford	2,839	331	3,170
Surry	10,597	2,393	12,990
Sussex	19,000	3,681	22,681
Tazewell	--	--	--
Warren	1,551	295	1,846
Warwick	1,404	59	1,463
Washington	4,116	3,695	7,811
Westmoreland	6,529	--	6,529
Wise	--	148	148
Wythe	999	--	999
York	14,543	765	15,308
Total	1,080,181	338,091	1,418,272

Table 17.--Companies drawing pulpwood from the South, 1957

State and plant location	Name of company and map code 1/	Pulp capacity, 24 hrs. 2/
		Tons
ALABAMA		
Brewton	(1) Container Corp. of America	300
Coosa Pines	(2) Coosa River Newsprint Co.	600
Demopolis	(3) Gulf States Paper Corp.	300
Tuscaloosa	(4) Gulf States Paper Corp.	400
Mobile	(5) Hollingsworth and Whitney Co.	420
Mobile	(6) International Paper Co.	1,190
Mobile	(7) National Gypsum Co.	300
Mobile	(8) Ruberoid Co.	53
ARKANSAS		
Crossett	(9) The Crossett Co.	620
3/Pine Bluff	(10) Dierks Paper Co.	150
Camden	(11) International Paper Co.	600
FLORIDA		
Pensacola	(12) Armstrong Cork Co.	130
Foley	(13) The Buckeye Cellulose Corp.	350
Fernandina	(14) Container Corp. of America	500
Palatka	(15) Hudson Pulp and Paper Corp.	850
Panama City	(16) International Paper Co.	1,615
Jacksonville	(17) Owens-Illinois Glass Co.	500
Fernandina	(18) Rayonier, Inc.	350
Port St. Joe	(19) St. Joe Paper Co.	1,200
Jacksonville	(20) St. Regis Paper Co.	1,500
Pensacola	(21) St. Regis Paper Co.	750
GEORGIA		
Macon	(22) Armstrong Cork Co.	200
Brunswick	(23) Brunswick Pulp and Paper Co.	460
Savannah	(24) Certain-teed Products Corp.	60
Savannah	(25) Continental Can Co.	600
Macon	(26) Georgia Kraft Co.	675
Rome	(27) Georgia Kraft Co.	675
Valdosta	(28) Owens-Illinois Glass Co.	630
Jesup	(29) Rayonier, Inc.	275
3/Jesup	(30) Rayonier, Inc.	275
St. Marys	(31) St. Marys Kraft Corp.	800
Savannah	(32) Union Bag-Camp Paper Corp.	2,050
LOUISIANA		
Shreveport	(33) Bird and Son	60
Elizabeth	(34) Calcasieu Paper Co.	240
Hodge	(35) Continental Can Co., Inc.	580
New Orleans	(36) Flintkote Co.	60
Bogalusa	(37) Gaylord Container Corp.	1,175
Bastrop	(38) International Paper Co. (Bastrop Mill)	590
Bastrop	(39) International Paper Co. (Louisiana Mill)	585
Springhill	(40) International Paper Co.	1,420
West Monroe	(41) Olin Mathieson Chemical Corp.	550
MARYLAND		
Luke	(42) West Virginia Pulp and Paper Co.	325
MISSISSIPPI		
Meridian	(43) Flintkote Co.	132
Moss Point	(44) International Paper Co.	650
Natchez	(45) International Paper Co.	865
Natchez	(46) Johns-Manville Products Corp.	300
Laurel	(47) Masonite Corp.	800
Greenville	(48) United States Gypsum Co.	180
NORTH CAROLINA		
Canton	(49) Champion Paper and Fibre Co.	935
Roanoke Rapids	(50) Halifax Paper Co.	450
Sylva	(51) Mead Corp.	225
Plymouth	(52) North Carolina Pulp Co.	1,450
Acme	(53) Riegel Carolina Corp.	550
OHIO		
Chillicothe	(54) Mead Corp.	210
OKLAHOMA		
Pryor	(55) Bestwall Gypsum Co.	90
PENNSYLVANIA		
York Haven	(56) International Paper Co.	65
Spring Grove	(57) P. H. Glatfelter Co.	175
SOUTH CAROLINA		
Georgetown	(58) International Paper Co.	1,990
Hartsville	(59) Sonoco Products Co.	140
Charleston	(60) West Virginia Pulp and Paper Co.	950
TENNESSEE		
Calhoun	(61) Bowaters Southern Paper Corp.	1,200
Harriman	(62) Mead Corp.	112
Kingsport	(63) Mead Corp.	375
4/Nashville	(64) Mead Corp.	70
Knoxville	(65) Southern Extract Co.	105
TEXAS		
Pasadena	(66) Champion Paper and Fibre Co.	650
Evadale	(67) East Texas Pulp and Paper Co.	315
Lufkin	(68) Southland Paper Mills	740
Dallas	(69) Ruberoid Co.	60
VIRGINIA		
West Point	(70) Chesapeake Corp. of Virginia	600
Hopewell	(71) Continental Can. Co.	700
Lynchburg	(72) Mead Corp., Heald Division	125
Big Island	(73) Owens-Illinois Glass Co.	150
Jarratt	(74) Southern Johns-Manville Products Corp.	200
Franklin	(75) Union Bag-Camp Paper Corp.	400
Covington	(76) West Virginia Pulp and Paper Co.	850

1/ Corresponds to numbers at mill locations in figure 1.

2/ Southern Pulp and Paper Manufacturer, vol. 20, no. 10 (Oct. 1, 1957); and other sources.

3/ Started operation in January 1958.

4/ Discontinued operation in March 1958.

Table 18.--Pulpmills under construction or announced in the South

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
ALABAMA		
Naheola	(77) Marathon Southern Corp.	300
Sheffield	(78) Tennessee River Pulp and Paper Co.	300
ARKANSAS		
Pine Bluff	(79) International Paper Co.	845
LOUISIANA		
St. Francisville	(80) St. Francisville Paper Co.	225
SOUTH CAROLINA		
Catawba	(81) Bowaters Southern Paper Corp.	400
TEXAS		
Diboll	(82) Southern Pine Lumber Co.	--

[1] Corresponds to numbers at mill location in figure 1.

[2] *Southern Pulp and Paper Manufacturer*, and other sources.

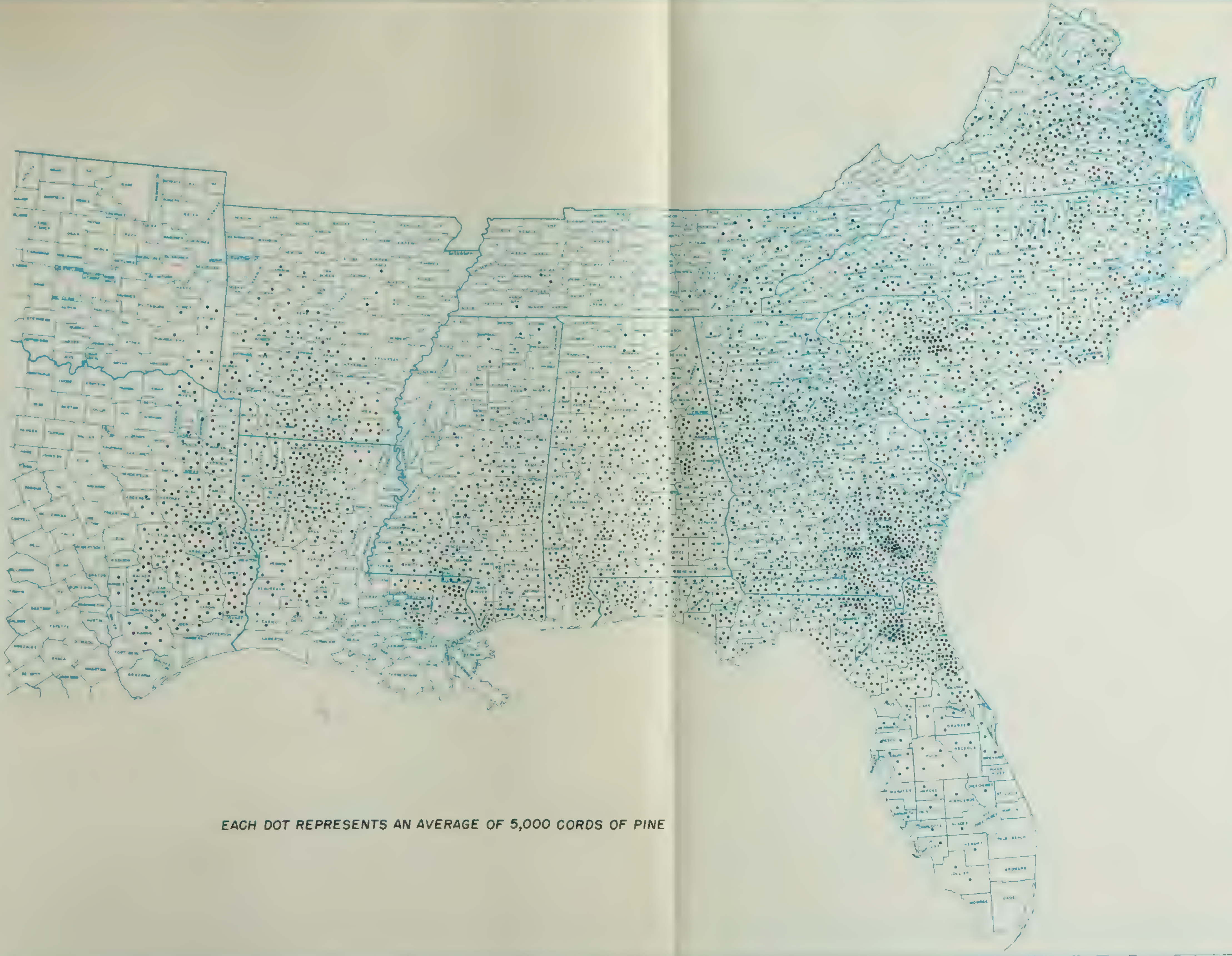


Figure 3.--Pine pulpwood production by county in the South, 1957.

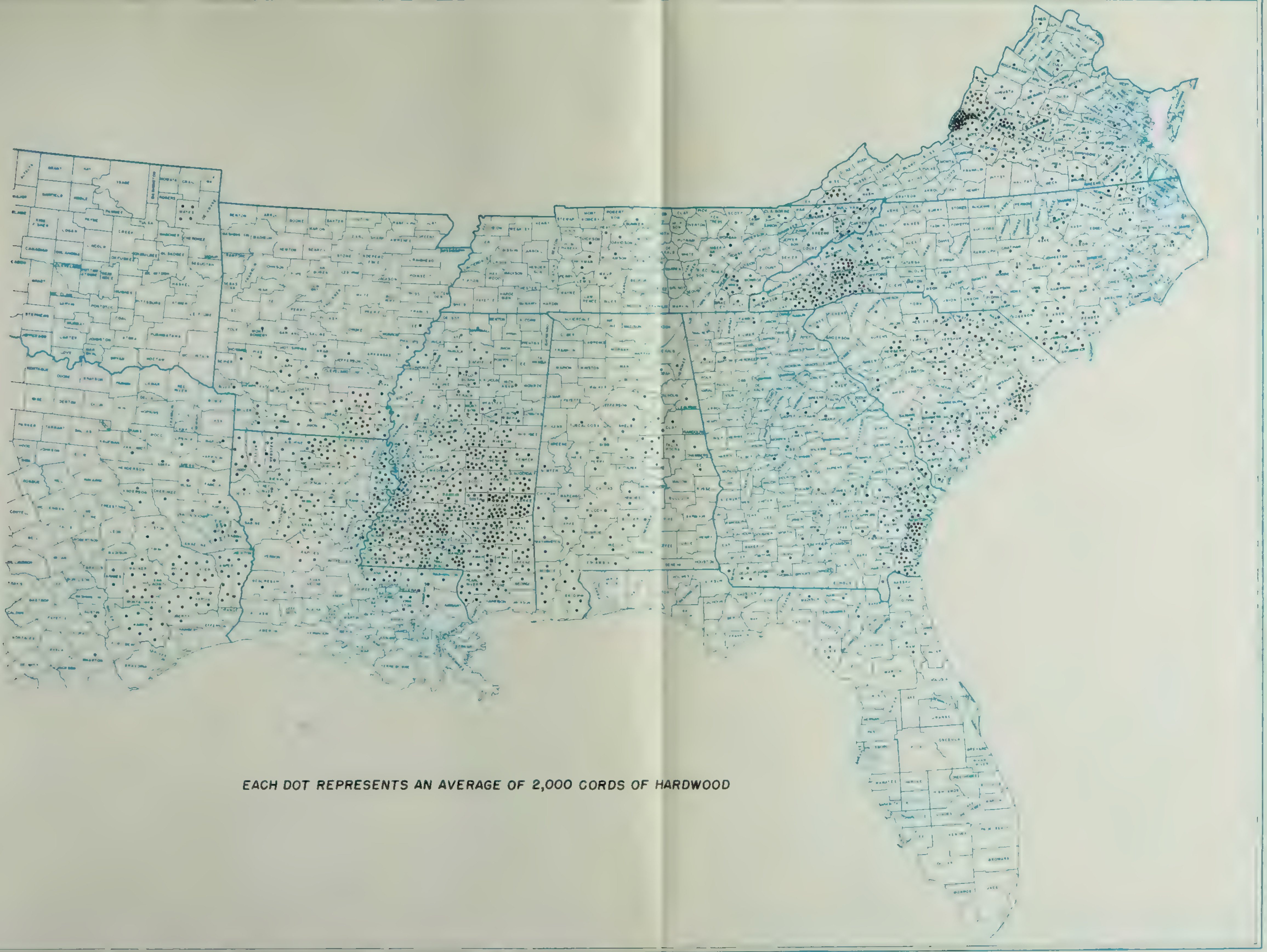


Figure 4.--Hardwood pulpwood production by county in the South, 1957.

13 63/7: 24

FOREST SURVEY RELEASE NO. 54 JUNE 1959

VIRGINIA'S TIMBER

by

Robert W. Larson and Mackay B. Bryan

COLLEGE LIBRARY
AUG 1 - 1959

HIGHLIGHTS

The immediate outlook is quite favorable. Current growth is adequate to provide forest industries with the amount and kind of timber they are now using. Although low-quality hardwoods are increasing very rapidly and replacing pine over a wide area, these inroads are being offset by hardwood control, by planting of pine, and by the natural seeding-in of pine on abandoned farm land. As a result, pine is just about holding its own.

The expected increase in need for timber makes the long-term outlook not quite so favorable. Although Virginia has the capacity to grow 50 to 75 percent more timber, vigorous action will be needed to realize this potential. It will mean the removal of low-quality hardwoods on several million acres to make room for pine and better hardwoods. Planting on much of this area and on about 1½ million acres of abandoned cropland will be essential.

U. S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Joseph F. Pechanec, Director

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the substantial assistance provided by the Virginia Division of Forestry in furnishing personnel and equipment for one field crew, and contributions of the pulp and paper companies listed below, which financed a second crew. Virginia Forests, Inc., provided material assistance in arranging this cooperation.

Chesapeake Corp. of Virginia
Continental Can Company
P. H. Glatfelter Company
Johns-Manville Products Corp.
Mead Corporation
Owens-Illinois Glass Company
Union Bag-Camp Paper Corp.
West Virginia Pulp and Paper Co.

Acknowledgment is also due personnel of the George Washington and Jefferson National Forests, and U. S. Forest Service Region 7 Timber Management Surveys for their cooperation in collecting field data on national forest land, and to the Tennessee Valley Authority for their cooperation in conducting field work in Russell, Smyth, and Washington counties.

The Forest Survey of Virginia was under the direction of the late James F. McCormack, Chief of the Division of Forest Economics Research at the Southeastern Station. Collection of field data was supervised by Ronald C. Froelich, and aerial photo interpretation was done by William H. B. Haines. Other staff assistance was as follows:

Field Inventory

Thomas R. Bellamy
Hubert H. Broyles
Frank H. Hawley
Philip L. Howard
Davie L. Hunt
Herbert A. Knight
M. H. Goforth
P. F. Lawson, Jr.
Wm. A. McElfresh
Joe P. McClure
Early G. Page
Robert F. Petracca
Clyde D. Steel
Chas. T. O'Keefe

Office Compilation

Eunice Gamble
Agnes Nichols
Louise Shuford
Sammy Wenningham
Camilla Young

CONTENTS

Page

Trends in timber use - - - - 1

Timber use increasing - - - - 1
Outlook for big increase in timber demand - - - - 2
More timber cut for pulpwood; less for fuelwood - - - - 2

Trends in the timber supply - - - - 6

More land to grow timber - - - - 6
Pine losing ground - - - - 7
Hardwoods overrun forest area - - - - 10
Poor balance between supply and cut - - - - 12
Current growth far below capacity - - - - 12

Increasing the timber supply - - - - 14

Big planting job ahead - - - - 15
Large-scale hardwood control needed - - - - 16
Reducing losses from destructive agents will help - - - - 17
Excellent forest fire record - - - - 17
Insects and disease - - - - 17
One-third of timber cut is not used - - - - 19
Future in hands of owners of small woodlands - - - - 20

Appendix - - - - 21

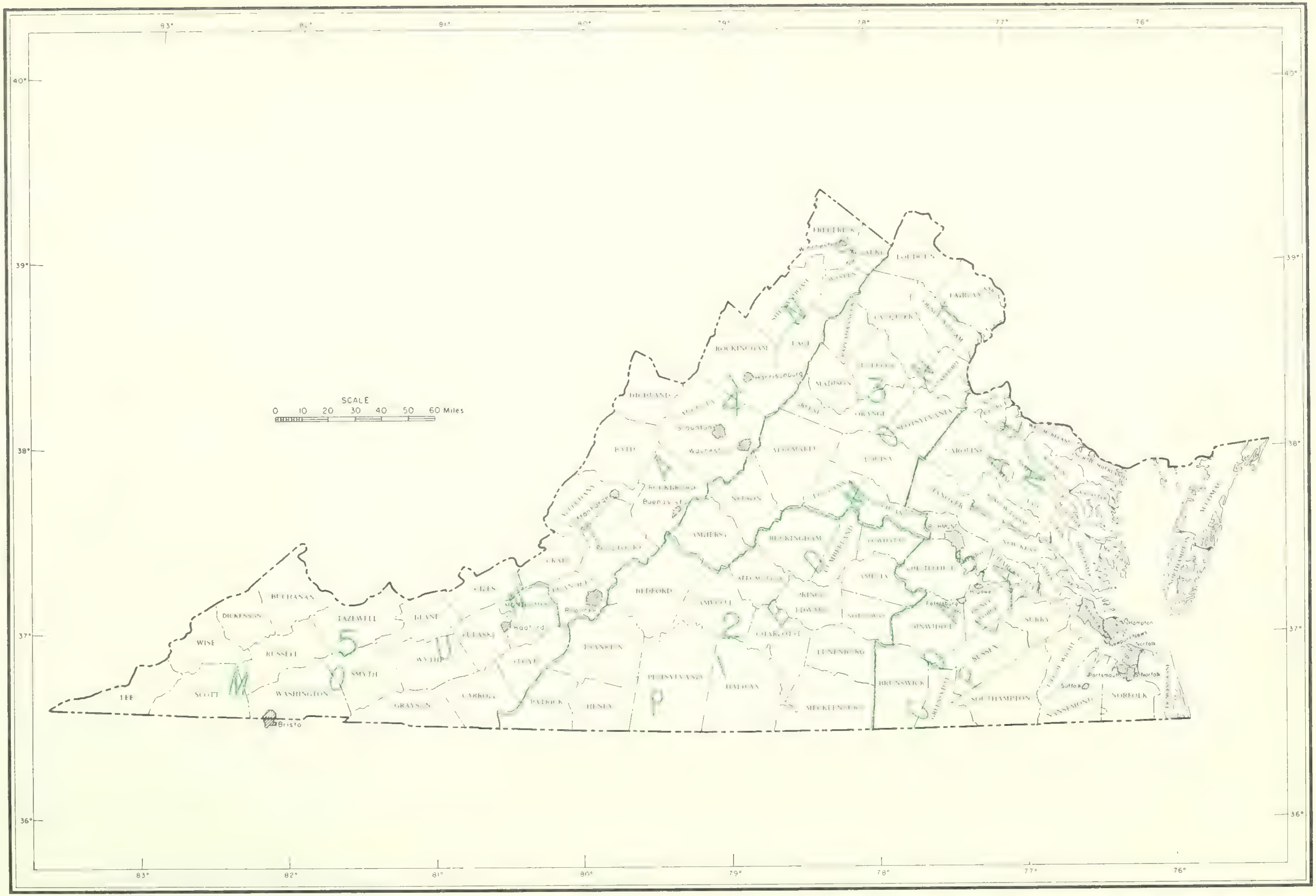
Accuracy of forest survey estimates - - - - 21

Definition of terms - - - - 23
  Land-use classes - - - - 23
  Forest types - - - - 24
  Site quality - - - - 24
  Stand-size classes - - - - 25
  Diameters - - - - 25
  Timber quality classification - - - - 26
  Species groups - - - - 27
  Volume estimates - - - - 27
  Growth and timber cut - - - - 28
  Stocking - - - - 28

How the forest inventory is made - - - - 29

Detailed tables - - - - 30
  Forest area tables - - - - 30, 31
  Timber volume tables - - - - 32-43
  Stocking tables - - - - 44, 45
  Timber growth and cut tables - - - - 46-49
  County tables - - - - 50-65

Standard tables - - - - 66-72



Forest Survey Units in Virginia.

VIRGINIA'S TIMBER

by

Robert W. Larson and Mackay B. Bryan

In July of 1957, a new survey of Virginia's forest resources was completed. During the 17-year interval since completion of the first survey in 1940, the timber supply outlook for the State has undergone a number of important changes. Timber cutting, growth, changes in land use, improved forest practices, and natural ecological trends in the forest stands have all contributed. Some changes have been desirable, but many have not. The findings of the new survey provide a means of evaluating trends in terms of amount and kind of timber that may be available to forest industries in the future. They also point to some of the problems Virginians must face in reversing undesirable trends and fostering those that are favorable.

TRENDS IN TIMBER USE

Timber Use Increasing

Currently, 412.2 million cubic feet of timber are cut annually from Virginia's forests (fig. 1). This is 18 percent above the cut in 1940 and 9 percent above the average for the period 1940 to 1956. Because of a drop in the softwood cut, less timber was cut in 1956 than in 1952 (fig. 2), but this may represent a short-term fluctuation rather than a reversal in the long-term upward trend.

Figure 1.—The trend in timber use in Virginia is up. Current cut is 18 percent above the 1940 cut. (Virginia Division of Forestry photo.)

The biggest increase in timber cutting took place in the coastal plain, where the volume of timber cut is now 24 percent greater than in 1940. Timber cut has increased 21 percent in the Piedmont since 1940, but in the mountain area cutting has decreased by 5 percent.

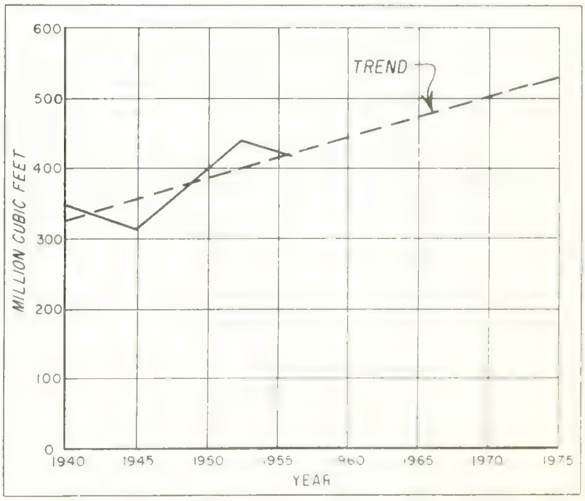


Figure 2.—Timber cut and trend, 1940 to 1975.

Outlook for Big Increase In Timber Demand

Further increases in the cut appear highly probable. If cutting follows the same trend in the future as it has during the past 17 years, Virginia will be cutting 525 million cubic feet by 1975, or 27 percent more than was cut in 1956 (fig. 2). In the light of the growing needs of America's rapidly increasing population, the cut could be even greater. In 1952, Virginia, with 2.9 percent of the commercial forest area in the Nation, contributed 4.0 percent of the cut. Maintaining this share of one recent estimate[1] of the probable national future cut would require a 34-percent increase in the cut by 1975 and a 94-percent increase by 2000.

More Timber Cut for Pulpwood; Less for Fuelwood

Lumber continues to be Virginia's most important timber product (fig. 3); sixty percent of the cut is used for saw logs (fig. 4). Lumber production has averaged 1.2 billion board-feet a year during the past 17 years. A high of 1.6 billion was reached in 1950, but for most years production has been between a billion and 1.2 billion board-feet (table 1).

Softwood lumber production shows no discernible trend, but the trend in hardwood lumber, although obscured by year-to-year fluctuations, is definitely upward. The computed trend over the past 17 years indicates that hardwood lumber production is increasing at the rate of 3.7 percent a year.

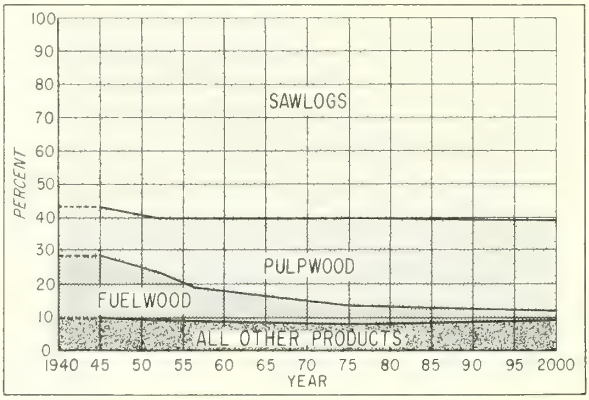


Figure 4.—Proportion of timber cut, by selected products, and projected proportion, 1975 and 2000.

Figure 3.—Saw logs cut for lumber continue to be the most important use of timber in Virginia.

Table 1.—Lumber production, selected years 1940 to 1956 [1]
(In million board feet)

Year	Softwoods	Hardwoods	Total
1940	713	337	1,050
1941	731	312	1,043
1942	813	401	1,214
1943	662	436	1,098
1944	640	577	1,217
1945	548	447	995
1946	683	534	1,217
1947	740	426	1,166
1948	--	--	--
1949	652	381	1,033
1950	983	574	1,557
1951	815	613	1,428
1952	670	518	1,188
1953	642	498	1,140
1954	740	511	1,251
1955	662	593	1,255
1956	730	642	1,372

[1] Source: U. S. Bureau of the Census.

---

[1] Middle projected demand for timber cut from live sawtimber, as shown in "Timber Resources for America's Future," U. S. Dept. Agr. Forest Resource Report No. 14, Washington, D. C., 1958.

One of the biggest changes in the cut by product is the increase in pulpwood (fig. 5). Between 1945 and 1956, pulpwood production has doubled (table 2). In 1956 the 1.6 million cords of pulpwood accounted for 21 percent of the total cut, compared to the 0.8 million cords which accounted for 15 percent in 1945. In 1957, pulpwood production dropped to 1.4 million, but this reduction was probably a temporary sag in the long-term upward curve.

One important change in the pulpwood production picture in recent years has been the disappearance of dead chestnut. Prior to 1949, pulpwood production included about 50,000 cords of this material, which made up about a fifth of the hardwoods cut for pulpwood. After 1948, the use of dead chestnut dropped rapidly as the remaining supplies were depleted or became too defective to be used, and virtually no dead chestnut pulpwood has been reported since 1952.

Figure 5.—Pulpwood production has doubled since 1945, and in 1956 made up 21 percent of the timber cut, compared to 15 percent in 1945.

Another change is the increased use of plant residues for pulpwood (fig. 6). Although Virginia's pulp production coming from plant residues is still small, the amount has been increasing rapidly during the past 5 years. In 1956 it amounted to the equivalent of 27,000 cords of pulpwood, or 2 percent of the total production. About four-fifths of this material comes from slabs and edgings produced at sawmills. Other plant residue includes veneer cores, cull crossties, and the end-trims from poles and pilings.

Also, more and more of the pulpwood is being cut from poletimber and cull trees. In 1956, 37 percent of the pulpwood cut came from poletimber, compared to 40 percent from sawtimber. Twenty percent was produced from cull trees, sapling-sized trees, and portions of sound trees not included in the growing-stock volume.

Although the volume of pulpwood cut from hardwoods is increasing, the proportion has varied little from 20 percent during the past 10 years. In 1950 and 1951, the proportion cut from hardwoods hit a high of 24 percent; in 1949 it was down to 17 percent. But again in 1957, 24 percent of the pulpwood produced came from hardwoods.

Table 2.—Pulpwood production, 1945 to 1957
(In thousand cords)

Year	Pine	Hardwoods	Total
1945	606	193	799
1946	718	253	971
1947	776	249	1,025
1948	1,026	280	1,306
1949	705	190	895
1950	775	269	1,044
1951	989	337	1,326
1952	830	239	1,069
1953	1,033	234	1,267
1954	1,033	225	1,258
1955	1,138	268	1,406
1956	1,273	357	1,630
1957	1,080	338	1,418

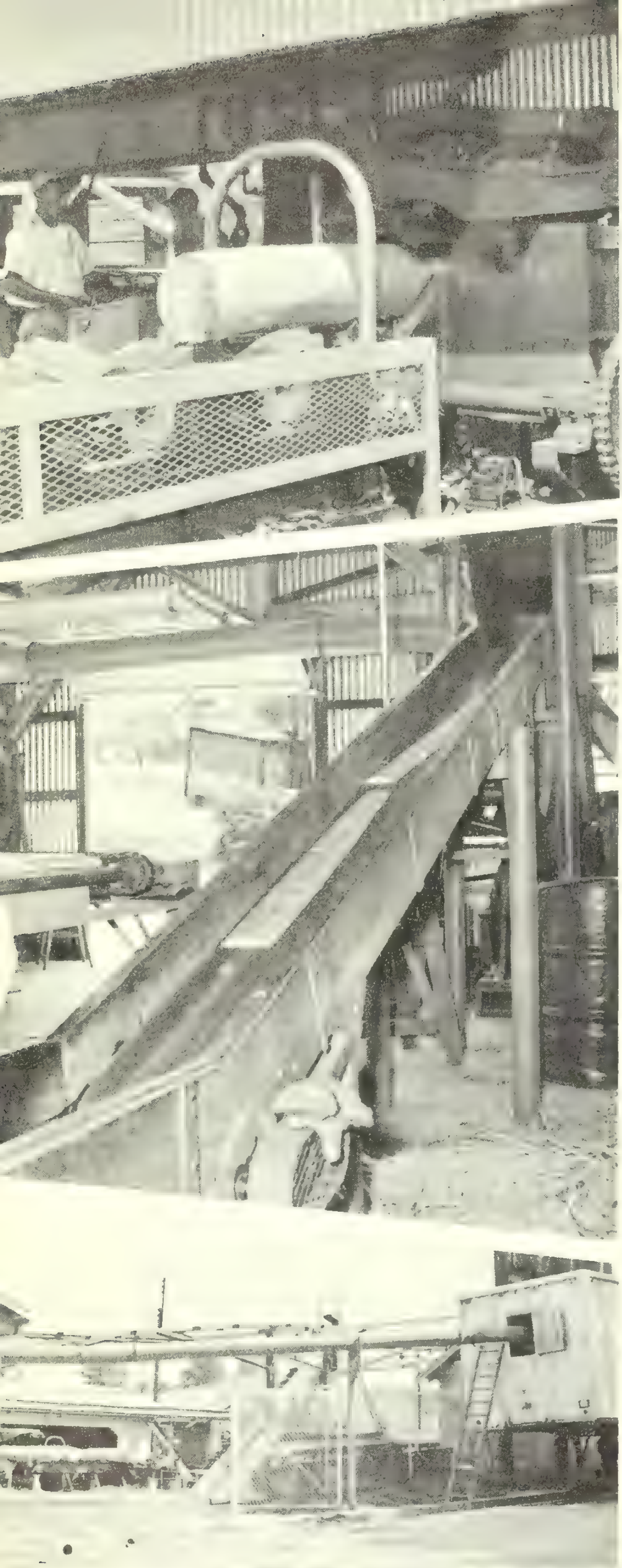


Figure 6.—At an increasing number of the larger sawmills in Virginia, logs are debarked, the debarked slabs are chipped, and the chips are blown into a waiting van to be shipped to a pulpmill.

The increase in timber cut for pulpwood has just about matched the decline in the cut for fuelwood. The total volume of wood used for fuel is now half what it was in 1945. Also, more and more of the fuelwood is coming from plant residues, dead trees, and culls, and less and less from growing stock as the timber becomes more valuable for other products (fig. 7). In 1956, only 46 percent of the fuelwood used came from sound trees 5 inches or larger in diameter. Other sources included 28 percent from cull trees, sound saplings, limbs, and tops under 4 inches in diameter, 20 percent from plant residues, and 6 percent from dead trees.

The main reason for this drop in use of wood for fuel has been the shift to other fuels and electricity, especially in rural households. For example, the number of rural households using wood for cooking in Virginia dropped from 181,000 in 1940 to 108,000 in 1950. Similarly, the number of rural households using wood for heating has dropped from 170,000 to 99,000 in 10 years.

Figure 7.—Not only is less wood being used for fuel now than in 1945, but a larger proportion of fuelwood comes from sources other than growing stock, such as these end cuts from a nearby stave mill.

Another change affecting the use of wood for fuel has been the shift from wood to oil in curing tobacco. In 1945, 154,000 cords of wood were used to cure tobacco in Virginia; now much of the tobacco is cured by oil furnaces.

Percentagewise, the volume of timber cut for veneer logs and bolts has increased substantially, but the amount currently being cut is still only 3 percent of the total cut. The amount of timber used for poles and piling, cooperage, hewn ties, fence posts, and timbers has dropped sharply, but these products have never made up a very large proportion of the cut.

These changes in use by product have had very little effect on the kind of timber forest industries need by species, size, or quality. If anything, forest industries are somewhat more exacting in their requirements than formerly. The increase in pulpwood cut puts a heavier drain on yellow pine than the fuelwood production it has replaced. Although small timber can and is being used for pulpwood, the need for large, high-quality timber, both softwoods and hardwoods, has not diminished (fig. 8). The cut for saw logs is as great as formerly, and the cut for veneer logs has increased. More large, high-quality timber would undoubtedly be cut if more of it were available. Past trends and studies of the kind of wood most needed in the future all indicate that for many years to come the demand will be for much the same kind of timber as that now being used, but in substantially larger quantities. A continuation of the upward trend in timber cut during the past 17 years would mean a cut of 525 million cubic feet by 1975, 27 percent greater than the 1956 cut.

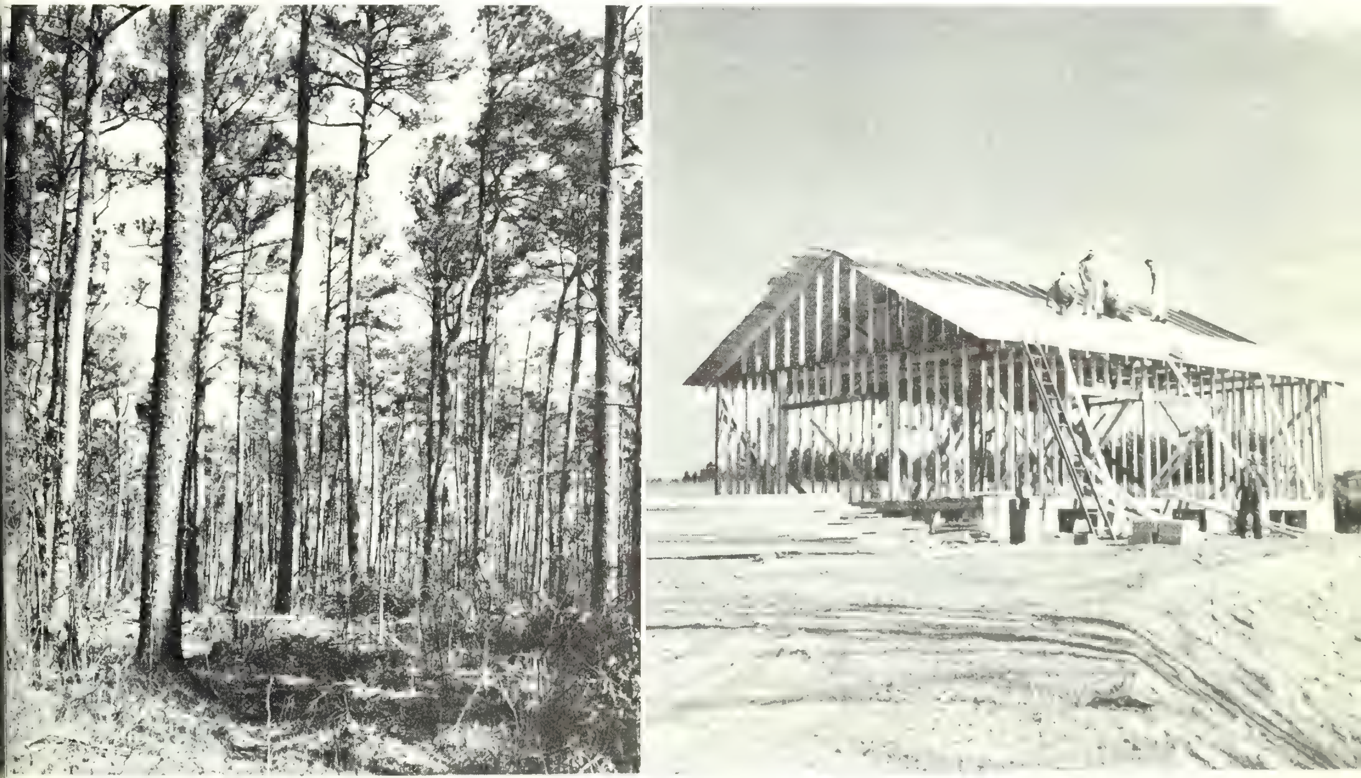


Figure 8.—No important shift in the kind of timber needed in the future is seen at this time. For many years to come, at least 60 percent of the timber Virginia grows will have to be large enough and of high enough quality to produce good lumber.

TRENDS IN THE TIMBER SUPPLY

For the most part, Virginia's timber supply is adequate to meet the immediate need for timber. Except for large pine sawtimber (trees 15.0 inches d.b.h. and larger), current growth is at least replacing the annual cut. However, in view of the prospective increase in the demand for pine and the strong natural tendency for hardwoods to replace pine throughout large areas in Virginia, the long-term outlook is not nearly so favorable.

Figure 9.—Land abandonment and reversion to forest exceeded land clearing by 1.3 million acres during the 17-year period between surveys.

More Land to Grow Timber

One trend favorable to the long-term outlook is the increase in land available to grow timber (fig. 9). During the 17-year period between forest surveys, forest area in Virginia increased from 14.8 million acres in 1940 to 16.1 million acres in 1957, an increase of 8.6 percent. Forests now cover 63 percent of the land area in the State, compared to 58 percent in 1940 (fig. 10).

Practically all Virginia's forest area is suitable and available for timber production. Only 663,600 acres, or 4 percent, is classed as noncommercial. Most of this area consists of extremely poor and inaccessible sites in the mountains. The remaining noncommercial area, most of it in the Shenandoah National Park, is productive but withdrawn from timber production for recreational purposes.

Forest area increased in all parts of the State, but the biggest increases occurred in the southern mountains and in the southern Piedmont. In the southern mountain unit, commercial forest land increased 15 percent, and in the southern Piedmont, 10 percent (table 3). About two-thirds of the total increase took place in these two units. Forest area in the coastal plain and northern Piedmont increased by only 4 percent, and in the northern mountains, by 6 percent.

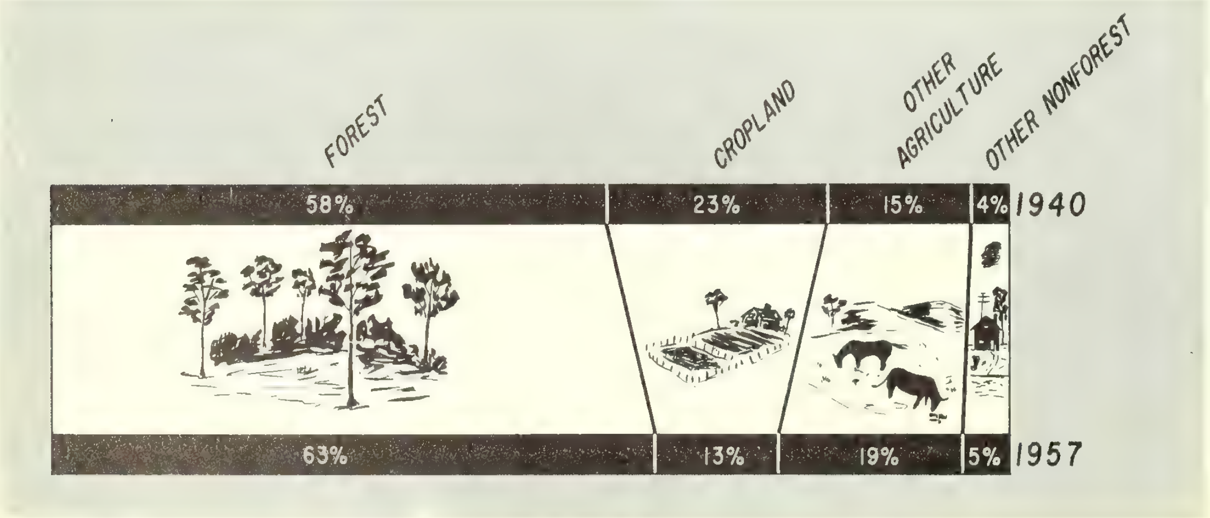


Figure 10.—Percent of land area by class of land use, 1940 and 1957.

Forests make up more than half the total area in each section of the State (fig. 11). Even the least forested units have 59 percent in forests. The southern Piedmont, which is the most heavily forested, is 66 percent forest.

Nearly all the increase in forest area is former agricultural land that has been abandoned and allowed to revert to forest. During the 17-year period between forest surveys the area of cropland dropped from 6.0 million to 3.2 million acres.

Further increases in forest land can be expected as the trend toward abandoning the less productive land and cropping more intensively the most productive land continues. Other cleared land, including pasture and idle cropland, amounts to 5.0 million acres, 1.2 million acres more than in 1940. A large share of the idle cropland is available for timber production.

Forces are at work, however, which may slow down the rate of increase in forest land. As the population increases, more and more land will be devoted to urban developments, highways, public utilities, and water storage facilities (fig. 12). The area of land devoted to these uses is still small, less than a million acres in 1957, but it has almost doubled in the last 17 years. Even with these opposing trends, the chances are good that Virginia will have 1 to 2 million acres of additional land for growing timber in the next 25 years.

Pine Losing Ground

This favorable trend in area of forest land is offset in part by the unfavorable trend in area growing pine. Because pine characteristically invades abandoned fields, it is reasonable to assume that a large share of the million-acre increase in forest area between surveys became stocked with pine. Yet this increase in pine type was more than offset by the conversion of existing pine and oak-pine types to hardwoods (fig. 13). During the 17-year period between surveys the area of pine and oak-pine types dropped 342,500 acres, an average of about 20,000 acres a year (table 3).

This decline in area of pine type was balanced to some extent by improvement in pine stocking on the area that remained pine type. In 1940, there were enough pine trees 1.0 inch and larger in Virginia to stock 59 percent of the pine and oak-pine area; by 1957 the number of pine trees, though 4 percent less, was sufficient to stock 62 percent of the pine and oak-pine area (table 4). However, the number of newly established pine seedlings has failed to replace the number of 2- and 4-inch saplings growing into larger size classes. The number of 2-inch saplings dropped 8.2 percent and the number of 4-inch seedlings dropped 3.2 percent. This deficit will eventually be reflected in lower pine

Table 3.—Change in area of pine and hardwood types between surveys
(In thousand acres)

Unit	Pine types			Hardwood types			Total commercial forest area		
	1940	1957	Change	1940	1957	Change	1940	1957	Change
Coastal Plain	2,414.3	2,229.6	-184.7	1,504.9	1,837.5	+332.6	3,919.2	4,067.1	+147.9
Piedmont	2,757.0	2,711.1	-45.9	3,070.9	3,528.7	+457.8	5,827.9	6,239.8	+411.9
Northern Unit	908.0	934.4	+26.4	1,497.9	1,558.1	+60.2	2,405.9	2,492.5	+86.6
Southern Unit	1,849.0	1,776.7	-72.3	1,573.0	1,970.6	+397.6	3,422.0	3,747.3	+325.3
Mountains	1,059.1	947.2	-111.9	3,605.8	4,195.8	+590.0	4,664.9	5,143.0	+478.1
Northern Unit	612.8	597.2	-15.6	1,659.9	1,800.8	+140.9	2,272.7	2,398.0	+125.3
Southern Unit	446.3	350.0	-96.3	1,945.9	2,395.0	+449.1	2,392.2	2,745.0	+352.8
State	6,230.4	5,887.9	-342.5	8,181.6	9,562.0	+1,380.4	14,412.0	15,449.9	+1,037.9

Figure 11.—Forests dominate the landscape in all parts of Virginia. Even in the least forested areas, the northern Piedmont and southern mountains, forests make up 59 percent of the area.

Figure 12.—Area devoted to highways, public utilities, rights-of-way, and water storage, though still relatively small, can be expected to make increasingly greater inroads on the area available for timber production.

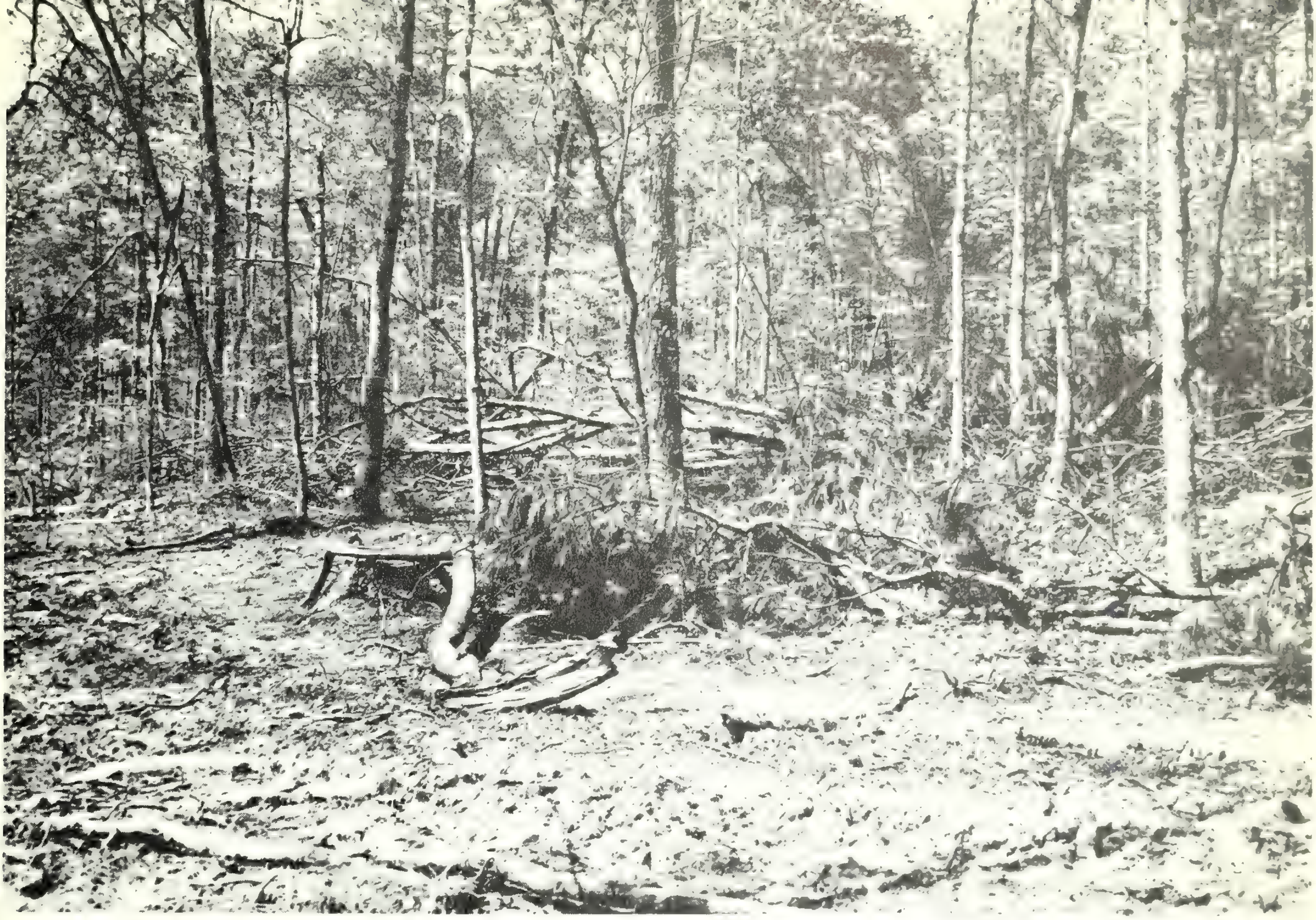


Figure 13.—Many pine and oak-pine stands consist principally of low-quality hardwoods following logging. Area of hardwood type increased by 1.4 million acres between surveys.

Table 4.—Comparison of number of sound trees, 1940 and 1957

D.b.h. class	Yellow pines				Hardwoods			
	1940	1957	Change		1940	1957	Change	
	- - - Thousand trees - - -			Percent	- - - Thousand trees - - -			Percent
2	884,433	812,276	-72,157	-8.2	2,680,542	2,984,749	+304,207	+11.3
4	456,774	441,992	-14,782	-3.2	656,795	1,007,452	+350,657	+53.4
6	279,246	285,680	+6,434	+2.3	310,531	412,104	+101,573	+32.7
8	149,967	156,130	+6,163	+4.1	160,958	238,346	+77,388	+48.1
10	75,536	71,922	-3,614	-4.8	99,030	143,367	+44,337	+44.8
12	37,924	37,023	-901	-2.4	61,825	83,570	+21,745	+35.2
14	17,306	16,334	-972	-5.6	35,023	51,742	+16,719	+47.7
16	7,513	6,346	-1,167	-15.5	17,357	25,369	+8,012	+46.2
18	3,151	2,658	-493	-15.6	10,444	14,033	+3,589	+34.4
20+	2,395	1,868	-527	-22.0	14,525	14,196	-329	-2.3
Total	1,914,245	1,832,229	-82,016	-4.3	4,047,030	4,974,928	+927,898	+22.9

stocking and reduced pine growth unless offset by planting or other measures to encourage pine regeneration.

Not only does Virginia have less land growing pine now than in 1940, but it has less pine volume (table 5). The biggest change was the 20-percent drop in volume of large pine sawtimber, trees 15.0 inches and larger in diameter at breast-height. An increase of 4 percent in pine poletimber volume (trees 5 inches through 8 inches) was just about offset by a 4-percent decrease in the volume of small sawtimber (trees 9.0 through 14.0 inches). Because large sawtimber contains only 13 percent of the total pine volume, this large decrease resulted in only a 4-percent decrease in the total volume in trees 5.0 inches and larger (table 6).

In 1956, total pine growth was slightly in excess of cut. Large pine sawtimber was still being overcut but not so severely as in the past. Thus, unless action is taken to increase pine growth, even a moderate increase in cut would result in a continuation of the downward trend in pine volume.

Hardwoods Overrun Forest Area

In sharp contrast to the pines, which are barely holding their own, hardwoods are increasing very rapidly. Between surveys the area of hardwood types increased by 1.4 million acres. Hardwood types now make up 62 percent of the forest area, compared to 57 percent in 1940. The number of hardwood trees increased by 23 percent. Only the number of trees 20.0 inches and larger decreased, and by only 2 percent. Hardwood sawtimber volume increased by 29 percent and total hardwood volume by 38 percent.

Not all of this increase in hardwood volume, of course, is undesirable; Virginia's forest industries need hardwoods as well as pine. As shown in an earlier section, about half the timber cut in Virginia is hardwoods. Despite substantially increased use, the State has a surplus of hardwoods at present. The current cut is only 42 percent of total growth, including culls. Even for the preferred species, which include yellow-poplar, sweetgum, and

Table 5.—Comparison of sawtimber volumes, 1940-1957 [1]

Species group	1940	1957	Change	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Yellow pines	11,882	10,834	-1,048	-9
Other softwoods	1,074	1,242	+168	+16
Soft hardwoods	5,972	7,333	+1,361	+23
Hard hardwoods	11,484	15,106	+3,622	+32
All species	30,412	34,515	+4,103	+13

[1] Original survey volumes have been recomputed to eliminate differences resulting from changes in standards between the two surveys. Thus, the 1940 estimate shown here will not agree with volumes previously published.

Table 6.—Comparison of volumes in all trees 5.0 inches d.b.h. or larger, 1940-1957 [1]

Class of material and species group	1940	1957	Change	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Growing stock:				
Yellow pines	3,994	3,839	-155	-4
Other softwoods	255	304	+49	+19
Soft hardwoods	1,933	2,526	+593	+31
Hard hardwoods	4,255	5,797	+1,542	+36
All species	10,437	12,466	+2,029	+19
All live trees:				
Softwoods	4,459	4,519	+60	+1
Hardwoods	7,607	10,509	+2,902	+38
All live trees	12,066	15,028	+2,962	+25

[1] Original survey volumes have been recomputed to eliminate differences resulting from changes in standards between the two surveys. Thus, the 1940 estimate shown here will not agree with volumes previously published.

white and northern red oak, growth is one-and-a-half times the cut.

Although hardwoods are growing much faster than they are being cut, nearly all of the hardwood volume in Virginia is potentially usable, at least for fibre. The preferred hardwood growing stock makes up 35 percent of the total hardwood volume, other hardwood growing stock 46 percent, and hardwood culls 19 percent. Other hardwood growing stock consists mainly of less desirable oaks (such as chestnut, post, scarlet, black, and southern red oaks) and hickory.

Hardwood growing stock includes the volume of sawtimber trees (those now 11.0 inches d.b.h. or larger with at least 50 percent of their volume suitable for lumber) and poletimber trees (those 5.0 to 11.0 inches which are expected to qualify as sawtimber when they become large enough). Most of the cull hardwoods are culls only in the sense that they do not meet the minimum specifications for sawtimber. Nearly all these trees are sound culls — disqualified as growing stock because of undesirable species, poor form, excessive limbiness, or other defects. For the most part, they are just as suitable for pulpwood as the hardwood growing stock. Less than 10 percent of the hardwood cull volume is in rotten cull — trees having little use except for fuelwood.

This big surplus of timber would be desirable if it were not for the fact that the hardwoods are increasing so rapidly that they threaten to take over forest land needed to grow pine. In 1940, hardwood trees 1.0 inch or larger, including culls, covered 48 percent of the forest area; by 1957, this kind of timber covered 58 percent. And if hardwoods are allowed to continue increasing at this rate, they will cover 82 percent of the area by 1982.

Exclusive of possible additions to the forest area from abandoned cropland, this would leave 18 percent of the area, or only 2.8 million acres, to grow pine. This area, which is 3.1 million acres less than the 5.9 million acres now in pine and oak-pine type, even if fully stocked, would not be sufficient to grow enough timber to maintain the present cut.

Poor Balance Between Supply and Cut

While Virginia has enough forest land to grow substantially more than the present cut, far too much of the land is growing timber the forest industries cannot use now or in the foreseeable future. In 1956, 45 percent of the total timber cut came from softwood growing stock, yet this kind of timber made up only 28 percent of the inventory volume and only 18 percent of the total crown cover. In sharp contrast, other hardwood growing stock and hardwood cull timber are in surplus supply. They make up only a third of the cut, but culls and other hardwoods account for nearly half of the inventory volume and nearly two-thirds of the crown cover.

The supply of preferred hardwood growing stock seems to be in fairly good balance with the cut; with 24 percent of inventory volume and 19 percent of the crown cover, this kind of timber makes up 23 percent of the cut.

With no change in the present cut by type of timber, the trend is toward a still poorer balance between the cut and supply. Twenty-five years from now, softwood would make up only 22 percent of the inventory; culls and the other hardwoods would make up over 50 percent (fig. 14). An increase in the cut of softwoods and better hardwoods, which seems highly likely, would aggravate this condition.

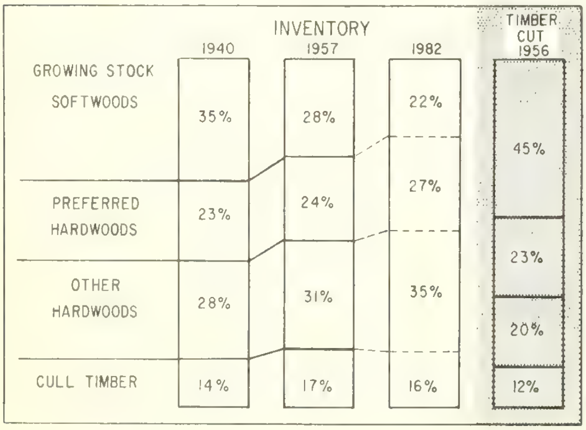


Figure 14.—Inventory volume in relation to current annual cut. Pine now makes up 45 percent of the cut, but if present trends continue, pine will comprise only 22 percent of standing timber in 1982.

Current Growth Far Below Capacity

In 1956, Virginia had enough trees 1.0 inch or larger to stock two-thirds of the forest area, but only enough pine trees to stock 24 percent of the forest area. The average timber stand contains 2,279 board-feet of sawtimber or 11.3 cords of growing stock per acre (table 7). Net growth on this timber averages 105 board-feet or a half cord per acre per year. Fully stocked forest land in Virginia should be able to grow on the average at least 160 board-feet or ¾ cord per acre per year — a 50-percent increase over current growth.

This potential growth is an average for all stand sizes. Annual growth for stands about to be harvested, of course, will usually be two or three times greater, but a considerable part of the forest land must be devoted to restocking with seedlings and saplings which do not contribute to the volume growth.

The growth per acre may be further increased by improving forest management. Frequent thinnings and improvement cuts will increase substantially the total yield per acre. Removing the less vigorous, the most defective, and the shortest-boled trees from the stand will mean faster growth, less mortality, and more volume per tree in the remaining stand.

Under the most favorable conditions, i.e., intensive forest management, full stocking with high quality growing stock and a 1- to 2-million-acre increase in forest area, Virginia probably could increase current growth by as much as 75 percent.

The present cut of softwoods and hardwoods is well within Virginia's timber-growing capacity. However, increasing growth even enough to maintain the current trend in the cut will require both a substantial increase in growing stock and a major adjustment in the proportion by species group. For example, increasing pine growth by one-third would require increasing the area of pine type from the present 5.9 to 6.2 million acres and bringing the average stocking up from the present 62 percent to about 80 percent.

Table 7.—Net volume and growth per acre by forest type and survey unit, 1957

Survey unit and forest type	Sawtimber		Growing stock	
	Inventory	Growth	Inventory	Growth
	- - - Board-feet - - -		- - - Cords - - -	
State:				
Yellow pine	2,363	149	12.6	0.77
White pine	5,068	147	14.7	.60
Oak-pine	1,986	101	10.5	.51
Oak-hickory [1]	2,095	81	10.3	.39
Oak-gum-cypress	3,665	121	15.1	.53
All types	2,279	105	11.3	.51
Coastal plain:				
Yellow pine	3,947	274	17.3	1.11
White pine	--	--	--	--
Oak-pine	3,182	163	13.5	.66
Oak-hickory [1]	3,200	136	13.4	.51
Oak-gum-cypress	4,493	157	17.6	.65
All types	3,713	204	15.8	.82
Piedmont:				
Yellow pine	1,317	66	10.2	.62
White pine	--	--	--	--
Oak-pine	1,632	81	9.9	.45
Oak-hickory [1]	2,028	75	10.6	.36
Oak-gum-cypress	2,612	82	12.0	.42
All types	1,801	74	10.5	.45
Mountains:				
Yellow pine	941	39	5.9	.28
White pine	5,442	143	16.4	.59
Oak-pine	849	45	7.1	.41
Oak-hickory [1]	1,822	69	9.2	.37
Oak-gum-cypress	--	--	--	--
All types	1,726	65	8.8	.37

[1] Includes volume in maple-beech-birch type.

INCREASING THE TIMBER SUPPLY

Since the first Survey was completed in 1940, a good deal of forestry progress has been made in Virginia. A law now in effect requires that an adequate seed source be left following cutting (fig. 15). Virginia's good record of forest area burned is the result of its vigorous fire protection organization and the "Keep Virginia Green" program. Planting has increased rapidly under the "Plant More Trees" program, and each year unwanted hardwoods are destroyed on thousands of acres. The State has an effective plan and organization to deal with forest insects and diseases.

As a result of these efforts, the scales have been tipped slightly in favor of the pines. As long as the demand for pine is no greater than it is now, little more than a continuation of present trends in forestry will be needed to grow enough timber. However, present forestry action falls far short of providing enough timber to meet the expected increase in demand.

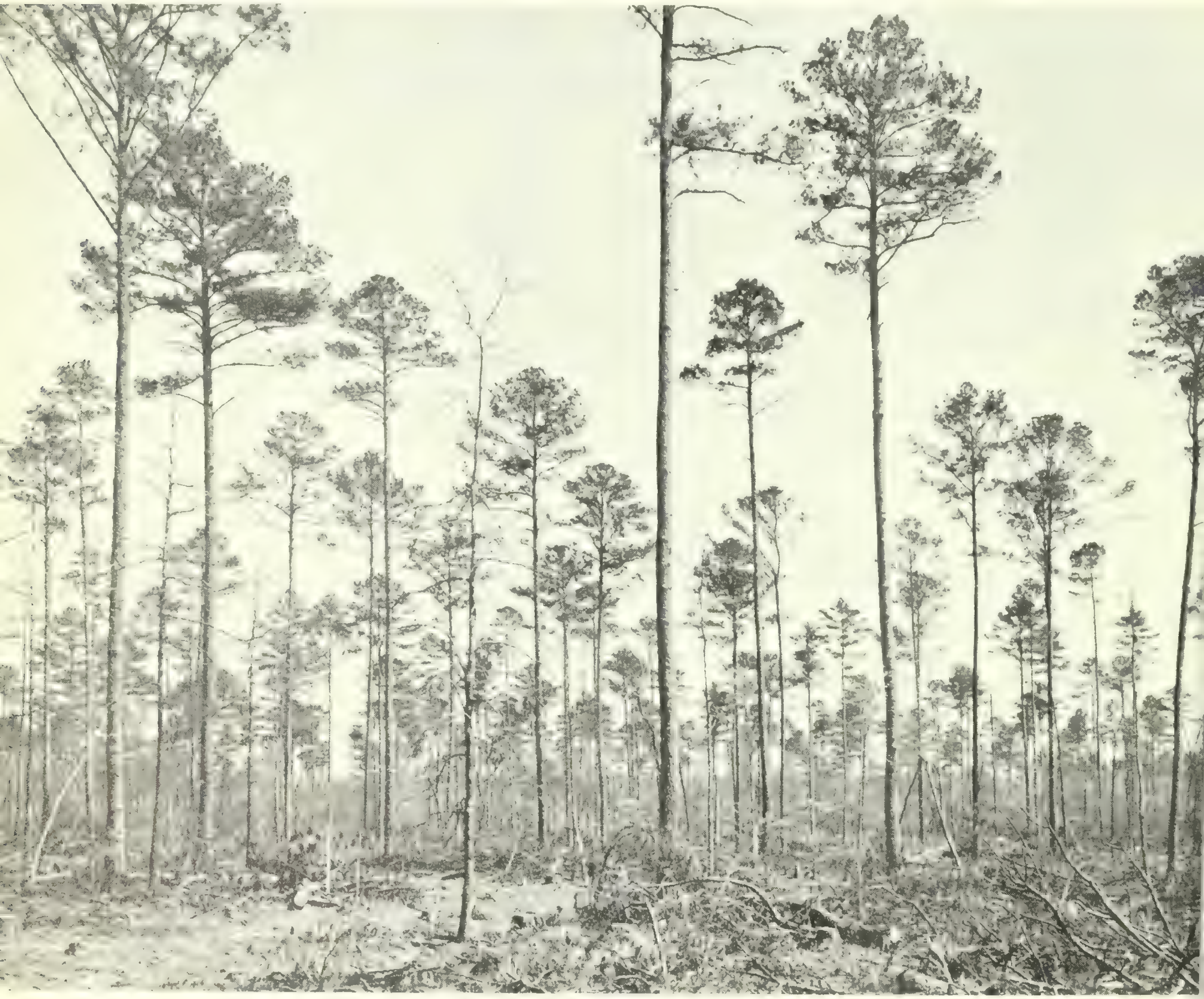


Figure 15.—Leaving an adequate seed source following cutting will go a long way toward assuring future supplies of pine timber.

Big Planting Job Ahead

To supply this increased demand, millions of additional pine seedlings must be established annually. Natural regeneration alone cannot be counted on to provide the seedlings needed.

As hardwoods continue to take over large areas formerly stocked with pine, planting will be relied upon more and more to supplement natural regeneration. Since 1945, planting has increased sharply (fig. 16). In 1945, only 836 acres were planted; by 1950, the area planted had jumped to 5,474 acres, and during the 1956-57 planting season enough pine trees were planted to stock 36,000 acres (table 8). On the average, 65 to 70 percent of the seedlings planted survive the first growing season. If the surviving seedlings are reasonably well spaced, survival rates even below this average will still result in satisfactory stocking by the time the stand reaches merchantable size.

In spite of this big increase in planting, the planting job is just started. In 1952, the total area that could be planted without site preparation was estimated to be 1.8 million acres. Between 1952 and 1957, about 100,000 acres were planted, leaving 1.7 million acres still suitable for planting. Most of this area (1.4 million acres) is idle agricultural land (fig. 17); the remainder is poorly stocked forest land. Cutting is not expected to add much to the plantable area, since most of the recently cut land either has an adequate seed source or will require site preparation.

If this area is to contribute materially to timber supplies by year 2000, reforestation should be completed by about 1980. To accomplish this will require planting about 75,000 acres annually, or a little more than twice the area planted during the peak season of 1956-57.

Figure 16.—During the 1956-57 planting season Virginia's forest nurseries supplied landowners with 33 million seedlings. Even this record production may still be too low to provide for the volume of timber needed 40 to 50 years from now. (Virginia Division of Forestry photo.)

Table 8.—Area planted, 1945 to 1957
(In acres)

Planting season	Area planted	Cumulative total
1944-45	836	17,988
1945-46	1,046	19,034
1946-47	1,723	20,757
1947-48	2,554	23,311
1948-49	3,798	27,109
1949-50	5,474	32,583
1950-51	4,927	37,510
1951-52	7,688	45,198
1952-53	10,050	55,248
1953-54	13,910	69,158
1954-55	16,199	85,357
1955-56	20,382	105,739
1956-57	36,161	141,900

Figure 17.—Virginia has 1.4 million acres of idle agricultural land. Unless planted, much of it will remain poorly stocked for many years, or become stocked with low-quality trees.

Large-Scale Hardwood Control Needed

Planting alone will not do the job. Vigorous action must be taken to maintain pine in the present pine and oak-pine types. Currently, the encroaching hardwoods are taking over 120,000 acres a year. Only 30,000 acres of this annual increase in hardwood cover consists of the preferred hardwood species. Culls take over 25,000 acres a year, and other less desirable hardwoods 67,000 acres. Not all, but a large part, of this increase is at the expense of pine. Just to maintain the present level of pine growing stock may require controlling enough hardwoods annually to make room for 50,000 to 75,000 acres of pine.

These hardwood control measures, of course, will not mean sacrificing desirable hardwood timber for pine. Most of the hardwoods that will be destroyed are very low in quality and contribute little or nothing to the present or future cut. The few high-quality hardwoods encountered during these control operations probably could be marketed. Also, such measures would not reduce the hardwood cover for game. In fact, killing enough hardwoods to make room for the pine needed to meet the medium level of projected demand would leave about the present area occupied by hardwoods.

Where the pine seed source is adequate, hardwood control will consist merely of destroying the undesirable cover and allowing the area to seed in naturally. Virginia has 1.4 million acres of oak-pine stands in which pine makes up only 25 to 50 percent of the volume. On most of this area, pine stocking will continue to decline unless measures are taken to remove competing hardwoods.

Other areas do not have an adequate seed source, and removal of the undesirable cover will have to be followed by planting. Virginia has 3.0 million acres of hardwood type which is probably more suited to growing pine than hardwoods. This area includes the oak-hickory stands on poor and fair sites in the coastal plain and Piedmont. Practically all of this area grew pine at one time, but now, because of cutting and natural ecological succession, it is covered mainly with small, low-quality trees of the less desirable hardwood species. Growth of hardwoods on these sites is low, merchantable boles short, and the occurrence of cull and defect high. Virginia has plenty of forest land far better suited to growing hardwoods than this area.

Clearly then, the so-called plantable area represents only part of the planting to be done in Virginia, possibly the smaller part. Planting following hardwood control and site preparation may add an additional 60,000 acres annually, running the total planting job to about 100,000 acres a year (fig. 18).

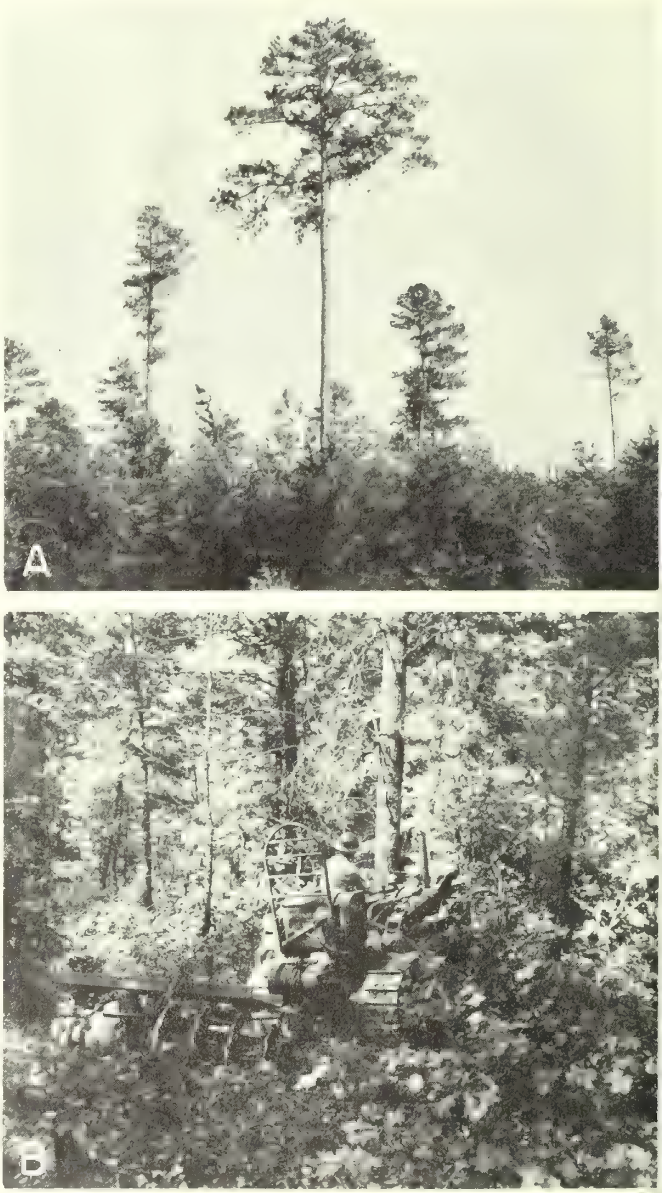


Figure 18.—On some areas where pine seed source is adequate (A) elimination of the competing hardwood and shrub cover will result in a satisfactory stand. But on many other areas (B) site preparation must be followed by planting.

Reducing Losses from Destructive Agents Will Help

Although most of the increase in growth will result from planting and hardwood control, reducing losses from destructive agents is an important means of increasing net growth. Merchantable timber saved from fire, insects, and disease is immediately available to forest industries, but it takes several decades for planting and hardwood control to be reflected in growth of merchantable timber.

Each year destructive agents kill 88 million cubic feet of growing stock. This represents about 16 percent of the current net growth. However, since only a third of this mortality is pine, the opportunity to make more pine available by reducing mortality is limited. A reduction of a third, which is considered reasonable expectation, would make 10 million cubic feet immediately available to forest industries. This is equivalent to the growth on 200,000 acres of forest land.

Mortality, or the volume of trees 5.0 inches and larger killed or destroyed, makes up only a small part of the total loss caused by destructive agents. The total effect on growth, the growth impact, which includes mortality and growth losses, has been estimated to be as much as six times the mortality. Losses other than mortality arise from growth slow-down due to changes in timber type, to defoliation, and to reduced tree vigor. Other causes include delays in restocking, deficiencies in stocking, increase in cull, and loss of accumulated growth that would have been added if small trees had not been destroyed. These losses may add up to as much as three-fourths of the total growth. Cutting these losses by a third could add as much as 60 million cubic feet to net annual growth of pine. Fire, insects, and disease account for nearly two-thirds of the mortality and growth loss. The remaining damage is from miscellaneous causes such as wind, drought, animals, and suppression.

Decreasing the destructive action of fire, insects, and disease would increase the number of seedlings getting started, but the effect of this increased stocking would not be felt for 40 or 50 years. More important is the action that will reduce the destructive effect of fire and forest pests on trees large enough to contribute to the timber supply now.

Excellent Forest Fire Record

Virginia has one of the best forest fire records in the Southeast. In 1956, fires burned over only 10,000 acres, or only 0.07 of the forest area.

However, 1956 was an unusually good year. During the past 10 years, the average annual burn was about 28,000 acres (table 9). Each year about 1,900 fires start and burn on the average 15 acres of forest land. Still, during the past 10 years, less than 0.2 percent of the forest area in Virginia burned over annually.

All of Virginia's forest land is protected from fire, and protection is in general adequate, except that failure is likely in the worst fire years. Very little of the forest land has fire protection adequate to meet the worst fire situations that can be expected to occur from time to time. Yet it is highly important that provision be made to handle such emergencies, since one bad year can wipe out all the gains made during the good and average years (fig. 19). For example, the area burned during the exceptionally dry year of 1952 was equal to almost half the total area burned during the period 1947 through 1956.

Insects and Disease

Insects and disease affect the timber supply in a number of ways. Trees killed mean a loss of timber volume and a reduction in stocking. But most important is the reduction in vigor and value of surviving trees. Complete or partial defoliation, such as occurred following recent outbreaks of hardwood defoliators and pine sawflies, reduces growth on millions of trees and invites attacks by secondary insects, causing degrade and deterioration. An even more serious loss arises from the deterioration, degrade, and loss of usable volume caused by rot, especially heart rot. It is estimated that heart rot alone accounts for four-fifths of the total growth loss due to disease in the South. In Virginia, where a large proportion of the hardwoods are of sprout origin or have at one time or another been scarred by fire, the losses may be even greater. The reduction in area burned in Virginia will go a long way toward reducing this serious source of timber loss. Also, the reversing of a common logging practice on unmanaged land — cutting the best and

Table 9.—Area burned, number of fires, percent of forest area burned, and average size of fires, 1947 to 1956

Year	Area burned	Percent of forest area	Number of fires	Average size of fires
	Acres			Acres
1947	25,100	0.17	1,701	15
1948	8,185	0.06	1,028	8
1949	12,597	0.09	1,630	8
1950	20,740	0.14	2,110	10
1951	16,228	0.11	1,994	8
1952	118,690	0.81	2,568	46
1953	35,197	0.24	2,517	14
1954	17,407	0.12	2,393	7
1955	17,648	0.12	1,564	11
1956	10,244	0.07	1,461	7
Average	28,204	0.19	1,897	15

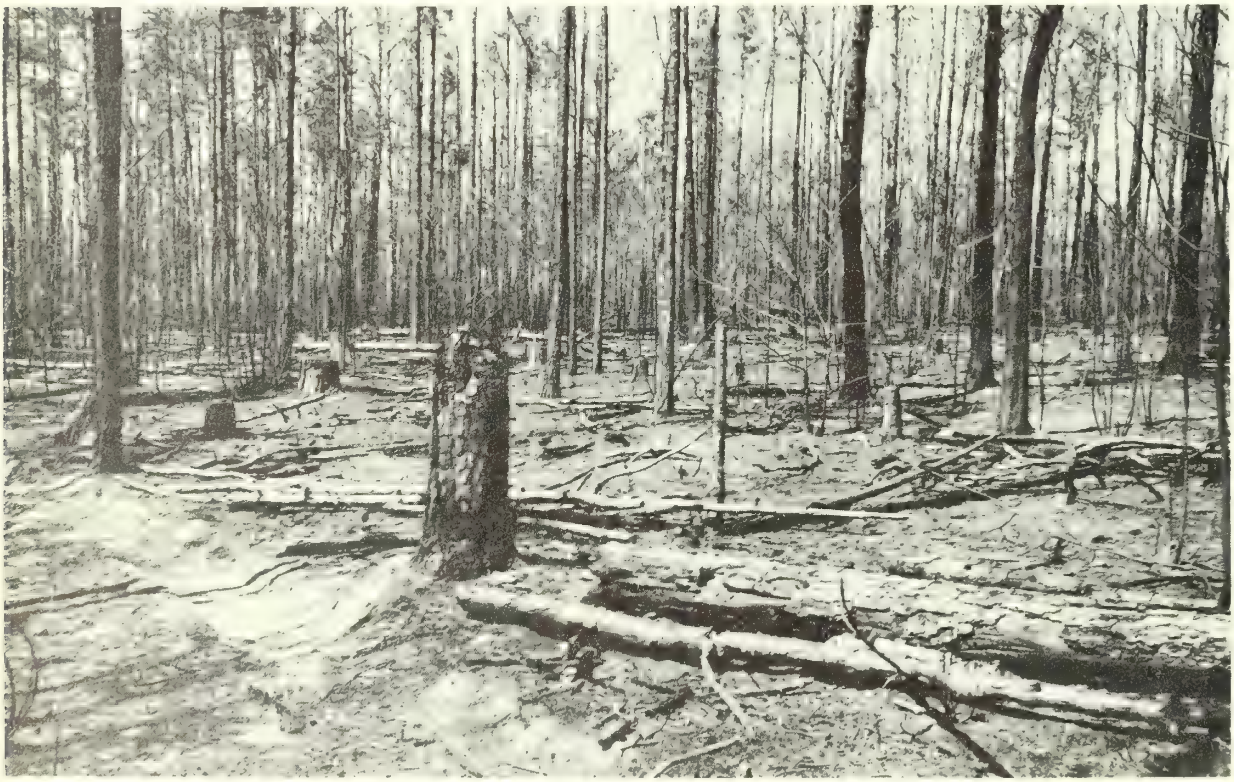


Figure 19.—Favorable weather conditions, together with efficient protection and control measures, have reduced area burned to a record low. However, fire protection must be geared to cope with the worst fire conditions, since one bad year can quickly wipe out gains made during many good years. (Virginia Division of Forestry photo.)

leaving the poorest — would decidedly reduce losses from disease and other defects in Virginia.

Because of the widespread and sporadic occurrence of such losses, their reduction presents a very difficult problem. Where concentrations of damaged timber are heavy enough to justify logging operations, prompt salvage can be undertaken. But such concentrations are the exception rather than the rule. Some of these losses can be reduced by eliminating damaged trees during harvest or improvement cuts and by encouraging timber which is less susceptible to damage. But such efforts can never eliminate all the losses from insects and disease; a certain amount must be accepted as natural and irreducible.

A constant vigil to detect threatening flareups of epidemic proportions, and the ability to bring such flareups quickly under control is as important as minimizing natural losses. Virginia has come a long way toward establishing an effective pest detection and control organization. A blister rust control program has helped keep disease losses to white pine low, and an aggressive State oak wilt control program shows promise of preventing major damage from this disease. A reporting system is in effect whereby individual landowners report signs of outbreaks to the State's pest control officer. Both State and Federal agencies make surveys of such outbreaks and issue reports, newsletters, and bulletins to inform landowners of serious outbreaks. Where the damage is serious enough to justify control measures, they recommend the most effective method available. In addition, meetings are held to train landowners in detecting outbreaks.

One-Third of Timber Cut Is Not Used

A large proportion of the timber classed as growing stock cut each year is not used. About 10 percent is left in the woods following logging, while another 21 percent ends up as unused plant residue, mainly as slabs, edgings, and sawdust (table 10). Thus, only two-thirds of the timber cut is actually used.

The use of a large part of this material is not practical, nor would its use contribute to easing the timber supply situation. In the first place, almost two-thirds of this unused material is hardwoods. Most of the hardwood timber left in the woods is in tops, material which at best is suitable only for pulpwood, and much of it only for fuelwood. Virginia has a big surplus of this kind of timber; a greater use of either the logging residue or plant residue would not help fill the demand for pine or high-quality hardwood timber.

Furthermore, complete use of material left following pine logging operations would not materially increase the supply of pine. Only 6 percent of the pine timber is left following logging, and most of this consists of widely scattered and extremely limby tops too poor in quality to justify salvage.

A greater use of pine slabs and edgings

Table 10.—Disposition of timber cut by species group, 1956

Disposition	Softwoods		Hardwoods		Total	
	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent
Left in woods (logging residue)	11,836	5.6	31,178	15.6	43,014	10.4
Transported to mill:	200,064	94.4	169,122	84.4	369,186	89.6
Used in manufacture	139,501	65.8	91,346	45.6	230,847	56.0
Plant residue	60,563	28.6	77,776	38.8	138,339	33.6
Used	22,005	10.4	26,510	13.2	48,515	11.8
Coarse	9,155	4.3	10,579	5.3	19,734	4.8
Fine	12,850	6.1	15,931	7.9	28,781	7.0
Unused	38,558	18.2	51,266	25.6	89,824	21.8
Coarse	19,380	9.1	27,488	13.7	46,868	11.4
Fine	19,178	9.1	23,778	11.9	42,956	10.4
Total timber cut	211,900	100.0	200,300	100.0	412,200	100.0

offers the most promising opportunity to make the timber supply go farther. During 1956, the volume of edgings and slabs produced from the manufacture of 626 million board-feet of pine lumber was equivalent to 357,000 cords. About 25 percent of this was used for pulpwood; another 25 percent was burned for fuel. The remainder was not used.

While only a small part of this available material is being used for pulpwood, the upward trend is encouraging. In 1956, about 20,000 cords of pulpwood were produced from slabs and edgings. Because much of the lumber is sawn at many small mills scattered throughout the countryside, complete use of this material will probably never be practical. Few of these small mills can afford log debarking equipment. Even where central edging and slab debarking equipment can be set up, the collection and transportation present a difficult problem. However, the utilization of but half this material for pulpwood would increase the supply of pine timber available to pulpmills by 178,000 cords. This would have the same effect as increasing net growth by about 5 percent.

Figure 20.—The amount and kind of timber Virginia will be able to supply forest industries in the future depends mainly on what the more than 200,000 owners do now to improve their small woodland tracts. (Virginia Division of Forestry photo.)

Future in Hands of Owners of Small Woodlands

Although there are many things forest industry, public agencies, and conservation-minded groups can do to encourage efforts to increase Virginia's timber supply, the main responsibility remains with the landowner. Virginia's forest industries depend upon the timber on thousands of small individual tracts scattered throughout the State for the major portion of their timber supply.

Public agencies own only 1.5 million acres of forest land, of which 1.2 million acres is in national forests. Forest industries own an additional 1.2 million acres. These two classes of lands receive the best forest management. According to a recent study, 90 percent of the recently-cut public land and 80 percent of recently-cut industrial land was left in satisfactorily productive condition.

But public and industrial lands account for only 18 percent of the forest area. Furthermore, the national forest land, which consists mainly of the less productive hardwood types, can supply little of the pine timber most in demand.

By far the greatest share of the cut will continue to come from the 12.7 million acres of forest land in small tracts owned by over 200,000 individuals. The average owner in this group has about 60 acres of forest land, and he is not dependent upon his forest land for livelihood. Two-thirds of these owners are farmers. Income from their woodland, partly as a result of the way it is managed, is usually sporadic and uncertain. Under such conditions, they have little incentive to expend money and effort to raise the productivity. Yet the amount and kind of timber that will be available to forest industries in the future depend largely upon what these owners do, or fail to do, to improve their woodlands (fig. 20).

APPENDIX

Accuracy of Forest Survey Estimates

In general, the errors affecting accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) nonsampling errors which arise from human mistakes in judgment, measurement, and recording.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The nonsampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Preliminary estimates of area by land-use class were based on examination of about 182,700 points systematically spaced on aerial photographs for the State. Subsamples of 4,822 photo points classified as forest and 1,737 in other land uses were established as sample plots on the ground. These ground plots provided adjustments for changes in land use since the date of photographs, and supplied detailed measurements and observations needed in evaluating forest conditions.

Forest area.--The sampling intensity of the 1957 survey provided an estimate of the total forest area with a standard error of plus or minus 0.4 percent. The probabilities were two out of three that the actual forest area was within plus or minus 0.4 percent of the estimated acreage. The standard error per million acres was plus or minus 1.6 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was plus or minus 1.5 percent, or plus or minus 5.3 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was plus or minus 1.9 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 9,480 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was plus or minus 5.3 percent, or plus or minus 3.4 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. *However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error.* It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data is as follows:

Item	Percent of error	
	Low	High
Forest area	±0.8	±6.6
Growing stock volume	±8.0	±18.4
Board-foot volume	±8.9	±24.7

Definition of Terms

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.

White pine-hemlock type: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is white pine or hemlock.

Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other associated hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Maple-beech-birch type: Upland hardwood forests in which 50 percent or more of the stand is sugar maple, beech, or yellow birch, singly or in combination, except where yellow pines make up 25 to 49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand. In the mountains, flat areas of forest bordering streams may be given this classification. River birch, sycamore, willow, and alder are characteristic of such areas.

Site Quality

Site quality of pine and oak-pine types is based on the total height of pine at age 50 years. For loblolly pine and oak-loblolly pine types, an index of 60 feet or shorter is regarded as poor site, 70 fair site, and 80 and taller good site.

For other pine and oak-pine types, a site index of 50 feet or shorter is considered poor site, 60 fair site, and 70 and taller good site.

Site quality of hardwood types is based upon the number of 16-foot saw logs in hardwood trees at maturity. Sites capable of growing hardwoods with three or more saw logs are considered good sites, 2 logs fair sites, and 1 log and less poor sites.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International $\frac{1}{4}$-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedlings and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at $4\frac{1}{2}$ feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

> Softwood logs[2] must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.
>
> Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications[3] for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

---

[2] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

---

[3] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes loblolly, pond, shortleaf, pitch, Table-Mountain, and Virginia pine.

Other softwoods: White pine, hemlock, spruce, fir, cypress, eastern redcedar, and whitecedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, willow, elm, hackberry, sycamore, magnolia, sweetbay, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, birch, black walnut, black locust, honeylocust, mulberry, sourwood, dogwood, holly, and persimmon.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International $\frac{1}{4}$-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs which are at least 4.0 inches in diameter inside bark is shown separately.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International $\frac{1}{4}$-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is $\frac{1}{4}$ inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Net growth: The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut: The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

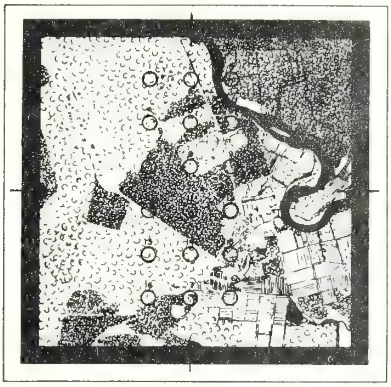
Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

How the Forest Inventory Is Made

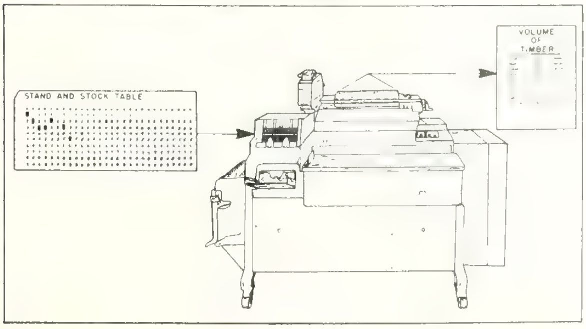
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Table 11.--Gross area[1] by broad use class

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	15,449.9	59.1
Noncommercial:		
Productive-reserved	259.4	1.0
Unproductive	404.2	1.6
Total forest	16,113.5	61.7
Nonforest land:		
Agriculture	8,156.2	31.2
Urban and other[2]	1,137.2	4.4
Total nonforest	9,293.4	35.6
Total land area	25,406.9	97.3
Total water area[3]	714.6	2.7
All classes	26,121.5	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc., and a small area of marsh.

[3] Includes 590,100 acres of Census water as of 1950 plus 31,800 acres of Census water created since 1950 and 92,700 acres classified by the Forest Survey as water but defined by the Bureau of Census as land.

Table 12.--Ownership of commercial forest land

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	1,197.6	7.8
Indian	--	--
Other Federal	190.6	1.2
Total Federal	1,388.2	9.0
State	87.2	0.6
County and municipal	51.8	0.3
Total public	1,527.2	9.9
Private land:		
Farm	10,085.1	65.3
Wood-using industries	1,238.7	8.0
Other	2,598.9	16.8
Total private	13,922.7	90.1
All classes	15,449.9	100.0

Table 13.--Commercial forest area by forest type and stand-size class

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine[2]	228.6	838.9	463.0	115.9	20.0	1,666.4
Shortleaf pine	47.8	394.4	676.2	154.8	4.0	1,277.2
Virginia pine	7.3	278.2	771.1	363.6	21.1	1,441.3
White pine	42.6	37.8	29.7	3.9	4.0	118.0
Total	326.3	1,549.3	1,940.0	638.2	49.1	4,502.9
Hardwood types:						
Oak-pine	138.0	451.3	666.8	142.9	7.5	1,406.5
Oak-hickory	1,871.9	2,059.3	3,622.7	829.0	170.0	8,552.9
Maple-beech-birch	20.4	14.0	14.8	--	2.8	52.0
Oak-gum-cypress	363.6	217.8	220.1	91.8	42.3	935.6
Total	2,393.9	2,742.4	4,524.4	1,063.7	222.6	10,947.0
All types	2,720.2	4,291.7	6,464.4	1,701.9	271.7	15,449.9
Percent	17.6	27.8	41.8	11.0	1.8	100.0

[1] See description of forest type and stand-size class under "Definition of Terms."

[2] Includes 22,100 acres of pond pine type.

Table 14.--Commercial forest area by forest type and site quality[1]

(In thousand acres)

Forest type	Poor site	Fair site	Good site	All sites
Softwood types:				
Loblolly pine	351.2	695.6	619.6	1,666.4
Shortleaf pine	411.9	567.6	297.7	1,277.2
Virginia pine	275.7	801.3	364.3	1,441.3
White pine	14.7	44.6	58.7	118.0
Total	1,053.5	2,109.1	1,340.3	4,502.9
Hardwood types:				
Oak-pine	263.2	522.5	620.8	1,406.5
Oak-hickory	585.7	5,512.0	2,455.2	8,552.9
Maple-beech-birch	1.0	12.8	38.2	52.0
Oak-gum-cypress	44.9	284.5	606.2	935.6
Total	894.8	6,331.8	3,720.4	10,947.0
All types	1,948.3	8,440.9	5,060.7	15,449.9
Percent	12.6	54.6	32.8	100.0

[1] See description of forest type and site quality under "Definition of Terms."

Table 15.--Net volume[1] of sawtimber by species and stand-size class

(In million board-feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine[3]	1,762.3	4,592.5	305.2	17.8	6.8	6,684.6
Shortleaf pine	366.1	1,739.8	520.0	18.8	3.5	2,648.2
Virginia pine	155.6	1,136.2	320.3	6.0	3.0	1,621.1
Total	2,284.0	7,468.5	1,145.5	42.6	13.3	10,953.9
White pine	299.2	206.3	40.4	2.6	1.6	550.1
Hemlock	349.8	46.5	10.7	--	--	407.0
Cypress	180.7	46.3	1.1	--	--	228.1
Cedar	9.5	46.1	10.5	--	--	66.1
Total sftwds.	3,123.2	7,813.7	1,208.2	45.2	14.9	12,205.2
Hardwoods:						
Blackgum	658.2	345.3	58.6	6.5	0.6	1,069.2
Sweetgum	776.7	631.6	97.6	23.9	2.1	1,531.9
Yellow-poplar	1,580.3	927.8	358.5	22.9	5.5	2,895.0
Cottonwood	3.2	--	--	--	--	3.2
Soft maple	506.9	323.3	82.3	9.0	--	921.5
Basswood	118.3	66.0	29.1	--	--	213.4
Other soft hdwds.	527.5	126.6	85.4	5.9	3.0	748.4
Total	4,171.1	2,420.6	711.5	68.2	11.2	7,382.6
White & swamp chestnut oaks	1,488.4	1,677.9	450.0	11.3	8.0	3,635.6
Other white oaks	1,120.7	871.4	378.7	21.6	6.3	2,398.7
Northern red & swamp red oaks	1,098.6	522.3	134.8	4.2	5.6	1,765.5
Other red oaks	1,872.8	1,592.6	485.5	23.4	6.6	3,980.9
Hickory	1,145.9	739.3	251.2	39.1	1.4	2,176.9
Ash	142.5	69.8	47.3	--	--	259.6
Beech	434.9	135.8	44.6	1.1	--	616.4
Sugar maple	106.9	36.2	14.7	2.7	--	160.5
Yellow birch	13.7	6.3	--	--	--	20.0
Black walnut	93.0	55.7	16.8	4.9	4.0	174.4
Other hard hdwds.	268.3	98.1	50.0	2.6	13.8	432.8
Total	7,785.7	5,805.4	1,873.6	110.9	45.7	15,621.3
Total hdwds.	11,956.8	8,226.0	2,585.1	179.1	56.9	23,003.9
All species	15,080.0	16,039.7	3,793.3	224.3	71.8	35,209.1
Percent	42.8	45.6	10.8	0.6	0.2	100.0

[1] Log scale, International 1/4-inch rule.

[2] See "Definition of Terms" for species combined with others.

[3] Includes 73.2 million board-feet of pond pine.

Table 16.--Net volume[1] of sawtimber by species and diameter class

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Million bd.-ft.	Percent
Softwoods:						
Loblolly pine	3,098.8	2,976.2	575.6	34.0	6,684.6	19.0
Shortleaf pine	1,759.7	759.9	128.6	--	2,648.2	7.5
Virginia pine	1,237.8	363.6	19.7	--	1,621.1	4.6
Total	6,096.3	4,099.7	723.9	34.0	10,953.9	31.1
White pine	175.1	237.8	129.8	7.4	550.1	1.6
Hemlock	45.7	87.1	95.7	178.5	407.0	1.2
Cypress	51.8	117.5	29.8	29.0	228.1	0.6
Cedar	44.1	18.9	3.1	--	66.1	0.2
Total sftwds.	6,413.0	4,561.0	982.3	248.9	12,205.2	34.7
Hardwoods:						
Blackgum	240.3	605.1	161.1	62.7	1,069.2	3.1
Sweetgum	426.3	867.3	211.3	27.0	1,531.9	4.4
Yellow-poplar	620.4	1,593.5	501.4	179.7	2,895.0	8.2
Cottonwood	--	3.2	--	--	3.2	(3/)
Soft maple	245.7	480.7	160.5	34.6	921.5	2.6
Basswood	71.4	121.8	20.2	--	213.4	0.6
Other soft hdwds.	136.2	383.4	172.1	56.7	748.4	2.1
Total	1,740.3	4,055.0	1,226.6	360.7	7,382.6	21.0
White & swamp chestnut oaks	964.7	1,962.6	505.4	202.9	3,635.6	10.3
Other white oaks	619.6	1,148.4	392.5	238.2	2,398.7	6.8
Northern red & swamp red oaks	265.1	833.4	351.1	315.9	1,765.5	5.0
Other red oaks	912.1	2,055.0	554.4	459.4	3,980.9	11.3
Hickory	495.0	1,195.7	324.2	162.0	2,176.9	6.2
Ash	77.9	147.1	34.6	--	259.6	0.7
Beech	72.2	300.3	166.1	77.8	616.4	1.7
Sugar maple	27.2	86.8	27.2	19.3	160.5	0.5
Yellow birch	2.1	13.6	4.3	--	20.0	0.1
Black walnut	42.4	120.3	11.7	--	174.4	0.5
Other hard hdwds.	112.2	215.0	98.1	7.5	432.8	1.2
Total	3,590.5	8,078.2	2,469.6	1,483.0	15,621.3	44.3
Total hdwds.	5,330.8	12,133.2	3,696.2	1,843.7	23,003.9	65.3
All species	11,743.8	16,694.2	4,678.5	2,092.6	35,209.1	100.0
Percent	33.4	47.4	13.3	5.9	100.0	--

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included since they are below sawtimber size.

[3] Less than 0.05 percent.

Table 17.--Net volume[1] of sawtimber by forest type and stand-size class

(In million board-feet)

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	1,659.8	4,868.6	274.1	13.0	7.4	6,822.9
Shortleaf pine	263.4	1,495.5	360.6	9.4	--	2,128.9
Virginia pine	39.1	1,053.9	311.7	7.2	--	1,411.9
White pine	462.5	122.9	12.8	--	--	598.2
Total	2,424.8	7,540.9	959.2	29.6	7.4	10,961.9
Hardwood types:						
Oak-pine	913.1	1,484.5	381.5	14.9	--	2,794.0
Oak-hickory	9,303.5	6,097.8	2,294.3	171.6	57.3	17,924.5
Maple-beech-birch	64.0	29.6	5.7	--	0.2	99.5
Oak-gum-cypress	2,374.6	886.9	152.6	8.2	6.9	3,429.2
Total	12,655.2	8,498.8	2,834.1	194.7	64.4	24,247.2
All types	15,080.0	16,039.7	3,793.3	224.3	71.8	35,209.1
Percent	42.8	45.6	10.8	0.6	0.2	100.0

[1] Log scale, International 1/4-inch rule.

Table 18.--Net volume of sawtimber by species group, log grade, and tree-size class

Log grade	10 - 14 inches[1/]		16+ inches		All trees	
	Million bd.-ft.	Percent	Million bd.-ft.	Percent	Million bd.-ft.	Percent
			YELLOW PINES			
Grade 1	--	--	101.2	3.7	101.2	0.9
Grade 2	1,354.5	16.4	1,015.9	37.6	2,370.4	21.7
Grade 3	5,113.1	62.0	992.0	36.7	6,105.1	55.7
Grade 4	1,780.9	21.6	596.3	22.0	2,377.2	21.7
Total	8,248.5	100.0	2,705.4	100.0	10,953.9	100.0
			OTHER SOFTWOODS			
Grade 1	--	--	53.7	6.9	53.7	4.3
Grade 2	66.4	14.0	157.1	20.2	223.5	17.9
Grade 3	345.8	72.7	417.9	53.9	763.7	61.0
Grade 4	63.1	13.3	147.3	19.0	210.4	16.8
Total	475.3	100.0	776.0	100.0	1,251.3	100.0
			SOFT HARDWOODS			
Grade 1	--	--	694.1	17.7	694.1	9.4
Grade 2	271.2	7.8	922.5	23.5	1,193.7	16.2
Grade 3	1,230.5	35.6	1,024.6	26.1	2,255.1	30.5
Grade 4	1,957.6	56.6	1,282.1	32.7	3,239.7	43.9
Total	3,459.3	100.0	3,923.3	100.0	7,382.6	100.0
			HARD HARDWOODS			
Grade 1	--	--	1,411.7	16.8	1,411.7	9.0
Grade 2	268.6	3.7	1,728.2	20.5	1,996.8	12.8
Grade 3	1,117.8	15.6	1,790.3	21.2	2,908.1	18.6
Grade 4	5,805.1	80.7	3,499.6	41.5	9,304.7	59.6
Total	7,191.5	100.0	8,429.8	100.0	15,621.3	100.0

[1/] Ten-inch hardwoods are not included since they are below sawtimber size.

Table 19.--Net volume[1] of all timber by species and stand-size class

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine[2]	4,622	16,618	3,969	109	27	25,345
Shortleaf pine	1,116	8,003	5,997	106	33	15,255
Virginia pine	655	6,285	6,931	58	15	13,944
Total	6,393	30,906	16,897	273	75	54,544
White pine	609	735	214	17	5	1,580
Hemlock	679	218	63	--	--	960
Cypress	386	147	3	--	--	536
Cedar	65	213	302	5	--	585
Total sftwds.	8,132	32,219	17,479	295	80	58,205
Hardwoods:						
Blackgum	2,444	1,926	561	51	2	4,984
Sweetgum	2,830	3,473	1,455	95	6	7,859
Yellow-poplar	4,724	3,765	3,217	101	16	11,823
Cottonwood	8	--	14	--	--	22
Soft maple	2,307	1,791	1,253	47	--	5,398
Basswood	436	256	189	--	--	881
Other soft hdwds.	1,756	887	1,050	26	12	3,731
Total	14,505	12,098	7,739	320	36	34,698
White & swamp chestnut oaks	5,531	9,036	4,826	111	22	19,526
Other white oaks	3,861	4,987	4,720	81	29	13,678
Northern red & swamp red oaks	3,207	2,150	1,724	62	17	7,160
Other red oaks	6,116	7,588	6,528	129	24	20,385
Hickory	4,387	3,962	2,572	153	5	11,079
Ash	772	474	448	--	--	1,694
Beech	1,284	750	359	4	7	2,404
Sugar maple	377	237	152	10	1	777
Yellow birch	83	25	37	--	--	145
Black walnut	304	250	322	56	13	945
Dogwood, holly	234	275	255	9	--	773
Other hard hdwds.	1,219	615	1,057	66	53	3,010
Total	27,375	30,349	23,000	681	171	81,576
Total hdwds.	41,880	42,447	30,739	1,001	207	116,274
All species	50,012	74,666	48,218	1,296	287	174,479
Percent	28.7	42.8	27.6	0.7	0.2	100.0

OTHER MATERIAL

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Sound culls:						
Softwoods	316	1,179	2,641	368	81	4,585
Hardwoods	7,006	5,720	9,923	1,276	651	24,576
Rotten culls	890	656	789	157	32	2,524
Total other material	8,212	7,555	13,353	1,801	764	31,685

[1] Sound wood and bark.

[2] Includes 192,000 cords of pond pine.

Table 20.--Net volume[1] of all timber by species and diameter class

(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	3,210	4,321	4,346	4,855	7,278	1,335	25,345
Shortleaf pine	3,355	4,141	3,182	2,390	1,906	281	15,255
Virginia pine	4,577	4,423	2,549	1,406	944	45	13,944
Total	11,142	12,885	10,077	8,651	10,128	1,661	54,544
White pine	116	284	197	254	490	239	1,580
Hemlock	48	97	56	88	197	474	960
Cypress	--	59	56	78	240	103	536
Cedar	271	163	69	37	38	7	585
Total sftwds.	11,577	13,488	10,455	9,108	11,093	2,484	58,205
Hardwoods:							
Blackgum	540	680	791	803	1,667	503	4,984
Sweetgum	962	1,275	1,576	1,284	2,227	535	7,859
Yellow-poplar	1,138	1,721	1,587	1,814	4,071	1,492	11,823
Cottonwood	3	11	--	--	8	--	22
Soft maple	1,063	969	736	812	1,346	472	5,398
Basswood	40	103	169	207	317	45	881
Other soft hdwds.	502	588	658	453	1,012	518	3,731
Total	4,248	5,347	5,517	5,373	10,648	3,565	34,698
White & swamp chestnut oaks	2,499	3,212	3,287	3,255	5,529	1,744	19,526
Other white oaks	1,915	2,666	2,055	2,145	3,290	1,607	13,678
Northern red & swamp red oaks	728	927	729	887	2,305	1,584	7,160
Other red oaks	2,684	3,187	3,403	3,013	5,687	2,411	20,385
Hickory	1,261	1,734	1,873	1,717	3,361	1,133	11,079
Ash	196	339	428	256	396	79	1,694
Beech	187	204	346	241	835	591	2,404
Sugar maple	76	159	79	97	249	117	777
Yellow birch	36	20	28	8	41	12	145
Black walnut	81	112	233	146	344	29	945
Dogwood, holly	341	155	147	49	81	--	773
Other hard hdwds.	805	452	611	347	536	259	3,010
Total	10,809	13,167	13,219	12,161	22,654	9,566	81,576
Total hdwds.	15,057	18,514	18,736	17,534	33,302	13,131	116,274
All species	26,634	32,002	29,191	26,642	44,395	15,615	174,479
Percent	15.3	18.3	16.7	15.3	25.4	9.0	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls:							
Softwoods	909	1,001	1,182	776	548	169	4,585
Hardwoods	3,619	3,758	3,448	2,999	5,923	4,829	24,576
Rotten culls	274	379	435	96	454	886	2,524
Total other material	4,802	5,138	5,065	3,871	6,925	5,884	31,685

---

[1] Sound wood and bark.

Table 21.--Net volume[1] of all timber by species and class of material

(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	14,398	3,416	7,531	25,345	520	34
Shortleaf pine	5,903	1,856	7,496	15,255	651	10
Virginia pine	3,885	1,059	9,000	13,944	3,068	17
Total	24,186	6,331	24,027	54,544	4,239	61
White pine	1,012	168	400	1,580	109	4
Hemlock	632	183	145	960	137	2
Cypress	390	87	59	536	74	21
Cedar	115	36	434	585	26	12
Total sftwds.	26,335	6,805	25,065	58,205	4,585	100
Hardwoods:						
Blackgum	2,215	758	2,011	4,984	1,383	181
Sweetgum	3,190	856	3,813	7,859	618	63
Yellow-poplar	5,892	1,485	4,446	11,823	758	159
Cottonwood	6	2	14	22	11	--
Soft maple	1,916	714	2,768	5,398	2,658	269
Basswood	471	98	312	881	116	46
Other soft hdwds.	1,497	486	1,748	3,731	1,139	49
Total	15,187	4,399	15,112	34,698	6,683	767
White & swamp chestnut oaks	7,273	3,255	8,998	19,526	1,998	166
Other white oaks	4,896	2,146	6,636	13,678	5,561	288
Northern red & swamp red oaks	3,482	1,294	2,384	7,160	1,203	127
Other red oaks	7,975	3,136	9,274	20,385	2,208	197
Hickory	4,413	1,798	4,868	11,079	1,280	125
Ash	563	168	963	1,694	447	32
Beech	1,229	438	737	2,404	1,075	193
Sugar maple	333	130	314	777	348	79
Yellow birch	41	20	84	145	102	9
Black walnut	367	152	426	945	306	39
Dogwood, holly	91	39	643	773	301	18
Scrub oak[2]	--	--	--	--	1,048	31
Other hard hdwds.	823	319	1,868	3,010	2,016	353
Total	31,486	12,895	37,195	81,576	17,893	1,657
Total hdwds.	46,673	17,294	52,307	116,274	24,576	2,424
All species	73,008	24,099	77,372	174,479	29,161	2,524
Percent	41.8	13.8	44.4	100.0	92.0	8.0

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 22.--Net volume[1] of all timber by forest type and stand-size class

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	5,071	19,399	4,240	72	35	28,817
Shortleaf pine	820	7,335	5,195	69	--	13,419
Virginia pine	129	5,593	7,113	140	7	12,982
White pine	1,064	535	136	5	--	1,740
Total	7,084	32,862	16,684	286	42	56,958
Hardwood types:						
Oak-pine	3,021	7,405	4,332	79	--	14,837
Oak-hickory	31,648	30,142	25,308	864	214	88,176
Maple-beech-birch	219	133	84	--	3	439
Oak-gum-cypress	8,040	4,124	1,810	67	28	14,069
Total	42,928	41,804	31,534	1,010	245	117,521
All types	50,012	74,666	48,218	1,296	287	174,479
Percent	28.7	42.8	27.6	0.7	0.2	100.0
OTHER MATERIAL						
Softwood types:						
Loblolly pine	299	664	373	86	3	1,425
Shortleaf pine	36	483	784	23	12	1,338
Virginia pine	14	575	1,771	267	39	2,666
White pine	127	101	45	--	19	292
Total	476	1,823	2,973	376	73	5,721
Hardwood types:						
Oak-pine	295	604	1,024	94	61	2,078
Oak-hickory	6,018	4,276	8,733	1,305	522	20,854
Maple-beech-birch	84	63	98	--	7	252
Oak-gum-cypress	1,339	789	525	26	101	2,780
Total	7,736	5,732	10,380	1,425	691	25,964
All types	8,212	7,555	13,353	1,801	764	31,685
Percent	25.9	23.9	42.1	5.7	2.4	100.0

[1] Sound wood and bark.

Table 23.--Net volume[1] of all timber by species and diameter class

(In million cubic feet)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine[2]	189.4	288.2	334.3	372.3	585.8	112.5	1,882.5
Shortleaf pine	198.0	279.2	228.6	181.7	153.0	23.6	1,064.1
Virginia pine	271.7	297.3	179.8	106.1	74.3	3.7	932.9
Total	659.1	864.7	742.7	660.1	813.1	139.8	3,879.5
White pine	8.1	21.2	15.7	21.5	43.0	22.5	132.0
Hemlock	3.5	6.6	4.6	7.5	17.7	45.9	85.8
Cypress	--	4.3	4.0	6.7	21.1	10.0	46.1
Cedar	17.9	12.2	5.1	3.3	3.5	0.6	42.6
Total sftwds.	688.6	909.0	772.1	699.1	898.4	218.8	4,186.0
Hardwoods:							
Blackgum	30.9	44.9	57.0	62.4	132.9	41.6	369.7
Sweetgum	55.1	84.3	113.3	96.1	175.4	44.1	568.3
Yellow-poplar	69.0	113.3	113.8	138.0	322.8	123.8	880.7
Cottonwood	0.2	0.7	--	--	0.6	--	1.5
Soft maple	63.2	63.6	53.2	61.5	106.9	38.7	387.1
Basswood	2.4	6.7	11.9	16.0	25.1	3.7	65.8
Other soft hdwds.	30.3	37.5	47.5	34.7	81.4	42.7	274.1
Total	251.1	351.0	396.7	408.7	845.1	294.6	2,547.2
White & swamp chestnut oaks	146.3	210.3	237.1	246.3	439.0	144.1	1,423.1
Other white oaks	113.9	174.4	148.9	161.6	261.1	133.3	993.2
Northern red & swamp red oaks	43.2	59.8	53.3	67.1	184.3	131.1	538.8
Other red oaks	156.7	208.4	247.2	230.1	448.9	199.5	1,490.8
Hickory	75.1	113.1	135.2	130.7	265.1	93.4	812.6
Ash	12.1	22.0	30.6	19.9	31.1	6.4	122.1
Beech	11.5	13.2	25.1	18.2	66.1	49.1	183.2
Sugar maple	5.5	10.3	6.1	7.2	20.1	9.7	58.9
Yellow birch	2.2	1.2	2.0	0.6	3.3	1.0	10.3
Black walnut	4.9	7.2	16.9	11.2	27.5	2.4	70.1
Dogwood, holly	19.9	10.1	10.7	3.4	6.2	--	50.3
Other hard hdwds.	52.2	28.9	44.3	26.5	43.2	21.3	216.4
Total	643.5	858.9	957.4	922.8	1,795.9	791.3	5,969.8
Total hdwds.	894.6	1,209.9	1,354.1	1,331.5	2,641.0	1,085.9	8,517.0
All species	1,583.2	2,118.9	2,126.2	2,030.6	3,539.4	1,304.7	12,703.0
Percent	12.5	16.7	16.7	16.0	27.8	10.3	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	53.1	67.3	84.8	59.1	44.4	15.7	324.4
Hardwoods	211.9	247.5	248.3	227.1	472.6	399.8	1,807.2
Rotten culls	17.6	26.6	30.6	10.2	35.4	73.8	194.2
Total other material	282.6	341.4	363.7	296.4	552.4	489.3	2,325.8

[1] Excludes bark.

[2] Includes 14.7 million cubic feet of pond pine.

Table 24.--Net volume[1] of all timber by species and class of material

(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	1,118.1	286.8	477.6	1,882.5	36.7	2.7
Shortleaf pine	443.5	143.4	477.2	1,064.1	45.4	0.7
Virginia pine	295.7	68.2	569.0	932.9	213.0	1.2
Total	1,857.3	498.4	1,523.8	3,879.5	295.1	4.6
White pine	90.3	12.4	29.3	132.0	8.8	0.3
Hemlock	59.5	16.2	10.1	85.8	11.7	0.2
Cypress	35.0	6.8	4.3	46.1	7.1	2.1
Cedar	10.4	2.1	30.1	42.6	1.7	0.9
Total sftwds.	2,052.5	535.9	1,597.6	4,186.0	324.4	8.1
Hardwoods:						
Blackgum	179.7	57.2	132.8	369.7	101.6	14.0
Sweetgum	257.6	58.0	252.7	568.3	45.4	4.6
Yellow-poplar	472.8	111.8	296.1	880.7	56.3	12.8
Cottonwood	0.5	0.1	0.9	1.5	0.7	--
Soft maple	153.1	54.0	180.0	387.1	193.5	19.3
Basswood	36.8	8.0	21.0	65.8	8.8	3.7
Other soft hdwds.	120.4	38.4	115.3	274.1	82.6	4.1
Total	1,220.9	327.5	998.8	2,547.2	488.9	58.5
White & swamp chestnut oaks	584.5	244.9	593.7	1,423.1	152.0	12.4
Other white oaks	391.0	165.0	437.2	993.2	417.8	22.9
Northern red & swamp red oaks	279.3	103.2	156.3	538.8	92.9	10.3
Other red oaks	639.3	239.2	612.3	1,490.8	162.3	14.5
Hickory	351.4	137.8	323.4	812.6	92.9	9.7
Ash	44.7	12.7	64.7	122.1	32.1	2.3
Beech	98.9	34.5	49.8	183.2	84.1	15.4
Sugar maple	26.9	10.1	21.9	58.9	26.4	6.1
Yellow birch	3.4	1.5	5.4	10.3	7.3	0.8
Black walnut	29.2	11.9	29.0	70.1	21.8	3.1
Dogwood, holly	6.7	2.9	40.7	50.3	19.1	1.3
Scrub oak[2]	--	--	--	--	69.4	2.7
Other hard hdwds.	65.5	25.5	125.4	216.4	140.2	26.1
Total	2,520.8	989.2	2,459.8	5,969.8	1,318.3	127.6
Total hdwds.	3,741.7	1,316.7	3,458.6	8,517.0	1,807.2	186.1
All species	5,794.2	1,852.6	5,056.2	12,703.0	2,131.6	194.2
Percent	45.6	14.6	39.8	100.0	91.7	8.3

[1] Excludes bark.

[2] Includes noncommercial species.

Table 25.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Loblolly pine					
Softwood	6,079	5,256	520	127	3,635
Hardwood	1,182	547	72	24	459
Shortleaf pine					
Softwood	4,750	3,398	495	51	1,495
Hardwood	752	395	38	8	171
Virginia pine					
Softwood	4,176	2,996	327	16	779
Hardwood	1,116	792	77	3	201
White pine					
Softwood	9,644	2,958	431	--	4,533
Hardwood	1,231	286	--	--	535
All pine types					
Softwood	6,306	4,321	433	46	2,137
Hardwood	1,124	546	61	8	297
Oak-pine					
Softwood	2,565	1,385	280	39	833
Hardwood	4,050	1,903	292	60	1,153
Oak-hickory					
Softwood	256	193	49	21	126
Hardwood	4,714	2,768	584	208	1,970
Maple-beech-birch					
Softwood	51	--	--	--	20
Hardwood	3,086	2,128	381	80	1,894
Oak-gum-cypress					
Softwood	634	441	19	16	356
Hardwood	5,899	3,630	675	97	3,309
All hdwd. types[2]					
Softwood	315	215	47	20	148
Hardwood	4,890	2,846	589	195	2,101
All types					
Softwood	1,148	1,821	187	31	790
Hardwood	4,396	1,917	400	119	1,489

[1] Log scale, International 1/4-inch rule.
[2] Oak-pine type not included.

Table 26.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees
Loblolly pine										
Softwood	16.0	0.4	19.4	0.4	8.2	0.5	0.6	0.5	14.3	0.4
Hardwood	6.2	0.9	3.7	0.4	1.0	0.3	0.2	0.2	3.0	0.4
Shortleaf pine										
Softwood	13.0	(2/)	15.7	0.6	6.4	0.7	0.4	0.1	8.8	0.6
Hardwood	4.2	0.7	2.9	0.6	1.2	0.5	0.1	0.1	1.7	0.5
Virginia pine										
Softwood	11.0	0.7	16.0	1.5	7.9	1.9	0.2	0.6	7.4	1.5
Hardwood	6.5	1.2	4.1	0.6	1.3	0.4	0.2	0.1	1.6	0.4
White pine										
Softwood	18.6	0.8	12.5	0.2	1.9	0.5	0.6	0.4	11.2	0.5
Hardwood	6.4	2.1	1.6	2.5	2.7	1.0	--	2.0	3.5	2.0
All pine types										
Softwood	15.8	0.4	17.7	0.6	7.4	1.1	0.3	0.5	10.5	0.8
Hardwood	5.9	1.0	3.5	0.5	1.2	0.4	0.2	0.2	2.2	0.4
Oak-pine										
Softwood	7.1	0.3	6.0	0.2	2.5	0.3	0.3	0.3	3.8	0.3
Hardwood	14.8	1.8	10.4	1.1	4.0	1.2	0.2	0.7	6.7	1.2
Oak-hickory										
Softwood	0.8	(2/)	0.9	(2/)	0.4	0.1	0.1	0.1	0.6	0.1
Hardwood	16.1	3.2	13.7	2.0	6.6	2.4	1.0	1.8	9.7	2.4
Maple-beech-birch										
Softwood	0.4	--	--	--	--	--	--	--	0.2	--
Hardwood	10.3	4.1	9.6	4.5	5.7	6.6	1.0	2.4	8.3	4.9
Oak-gum-cypress										
Softwood	1.5	0.3	1.3	(2/)	0.2	--	0.1	--	1.0	0.1
Hardwood	20.6	3.4	17.7	3.6	8.0	2.4	0.6	0.9	14.1	2.9
All hdwd. types[3]										
Softwood	0.9	0.1	0.9	(2/)	0.4	0.1	0.1	0.1	0.6	0.1
Hardwood	16.8	3.2	14.1	2.2	6.7	2.4	0.9	1.7	10.2	2.4
All types										
Softwood	3.0	0.1	7.5	0.3	2.7	0.4	0.2	0.2	3.8	0.3
Hardwood	15.4	2.9	9.9	1.5	4.8	1.7	0.6	1.1	7.[illegible]	1.7

[1] Sound wood and bark.
[2] Less than 0.05 cord per acre.
[3] Oak-pine type not included.

Table 27.--Number of trees[1] by species group, diameter class, and quality

(In thousand trees)

SOUND TREES

D.b.h. class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All trees
2	812,276	158,281	1,037,875	1,946,874	3,955,306
4	441,992	55,909	291,111	716,341	1,505,353
6	288,087	15,136	121,983	295,648	720,854
8	157,678	9,789	70,863	171,296	409,626
10	73,667	3,335	41,890	104,614	223,506
12	37,807	2,469	25,819	61,197	127,292
14	16,584	1,211	15,662	37,707	71,164
16	6,361	896	7,815	18,196	33,268
18	2,658	443	4,382	9,971	17,454
20	1,168	379	2,176	4,642	8,365
22	563	136	839	2,432	3,970
24	105	102	464	1,279	1,950
26	23	30	224	935	1,212
28	--	31	148	393	572
30+	20	104	108	866	1,098
Total	1,838,989	248,251	1,621,359	3,372,391	7,080,990

SOUND CULLS

D.b.h. class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All trees
2	132,384	17,446	571,057	1,566,192	2,287,079
4	42,405	4,450	90,499	343,817	481,171
6	30,581	1,872	35,572	105,888	173,913
8	15,670	1,044	19,546	47,836	84,096
10	10,947	327	10,903	24,586	46,763
12	4,332	273	5,704	14,469	24,778
14	1,144	145	3,230	8,178	12,697
16	510	27	1,717	5,581	7,835
18	118	38	976	3,475	4,607
20	70	19	804	2,153	3,046
22	19	23	277	1,623	1,942
24	--	--	158	881	1,039
26	--	6	121	410	537
28	--	24	39	358	421
30+	--	18	192	324	534
Total	238,180	25,712	740,795	2,125,771	3,130,458

ROTTEN CULLS

D.b.h. class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All trees
2	--	--	--	--	--
4	--	--	--	--	--
6	852	--	3,355	10,611	14,818
8	348	236	2,017	5,896	8,497
10	132	19	1,554	3,702	5,407
12	32	18	549	1,551	2,150
14	24	--	589	835	1,448
16	61	19	337	801	1,218
18	--	--	301	846	1,147
20	--	4	164	487	655
22	--	5	111	476	592
24	--	--	127	294	421
26	--	--	45	190	235
28	--	--	79	131	210
30+	20	18	161	197	396
Total	1,469	319	9,389	26,017	37,194

---

[1] All trees 1.0 inch d.b.h. and larger.

Table 28.--Area[1] of poorly stocked stands by plantability class

(In thousand acres)

Forest type	No planting required	Suitable for machine planting	Hand planting required	All classes
Loblolly pine	568.4	12.1	--	580.5
Shortleaf pine	753.1	7.3	38.4	798.8
Virginia pine	1,067.2	--	61.8	1,129.0
White pine	37.6	--	--	37.6
Oak-pine	777.3	3.0	16.6	796.9
Oak-hickory	4,132.4	11.9	150.3	4,294.6
Maple-beech-birch	12.5	--	5.1	17.6
All types	7,348.5	34.3	272.2	7,655.0

[1] Excludes 428,800 acres on which planting would be impractical because of existing dense cover of brush.

Table 29.--Stocking on commercial forest area by forest type and tree-size class

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	13.3	33.1	154.1	1,465.9	1,666.4
Shortleaf pine	4.1	128.3	244.1	900.7	1,277.2
Virginia pine	21.0	143.7	292.9	983.7	1,441.3
White pine	4.0	8.2	19.6	86.2	118.0
Oak-pine	7.4	101.0	258.3	1,039.8	1,406.5
Oak-hickory	117.1	945.4	2,424.1	5,066.3	8,552.9
Maple-beech-birch	1.0	7.1	11.1	32.8	52.0
Oak-gum-cypress	31.8	105.1	234.7	564.0	935.6
All types	199.7	1,471.9	3,638.9	10,139.4	15,449.9
Percent	1.3	9.5	23.6	65.6	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	399.2	525.7	381.9	359.6	1,666.4
Shortleaf pine	539.4	532.4	131.5	73.9	1,277.2
Virginia pine	970.9	333.4	109.8	27.2	1,441.3
White pine	33.0	41.0	24.6	19.4	118.0
Oak-pine	567.6	600.2	181.7	57.0	1,406.5
Oak-hickory	3,207.9	3,943.2	1,191.9	209.9	8,552.9
Maple-beech-birch	17.7	29.1	5.2	--	52.0
Oak-gum-cypress	244.2	370.3	187.4	133.7	935.6
All types	5,979.9	6,375.3	2,214.0	880.7	15,449.9
Percent	38.7	41.3	14.3	5.7	100.0

Table 30.--Net annual growth by species group and unit of measure, 1956

Species group	Sawtimber	Growing stock	
	Million bd.-ft.	Million cu. ft.	Thousand cords
Yellow pines	722.3	212.8	3,284
Other softwoods	42.5	10.0	130
Soft hardwoods	386.1	120.9	1,813
Hard hardwoods	561.7	205.2	3,111
All species	1,712.6	548.9	8,338

Table 31.--Net annual growth percentages by species group and unit of measure, 1956

Unit of measure	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	6.59	3.40	5.23	3.60	4.86
Cubic feet	5.49	3.26	4.75	3.44	4.32
Standard cords	6.02	3.55	5.23	3.81	4.78

Table 32.--Average annual change in volume per acre by stand size and forest type, 1956

Stand size and forest type	Sawtimber (In board-feet)				Growing stock (In standard cords)			
	Growth	Mortality	Timber cut[1]	Net change	Growth	Mortality	Timber cut[1]	Net change
Sawtimber stands:								
Yellow pine	346	26	319	1	1.13	0.15	1.19	-0.21
White pine	286	81	372	-167	.82	.14	.83	- .15
Oak-pine	232	33	166	33	.83	.11	.57	.15
Oak-hickory[2]	167	37	137	-7	.57	.13	.40	.04
Oak-gum-cypress	218	43	76	99	.77	.14	.18	.45
All types	224	34	182	8	.76	.14	.59	.03
Poletimber stands:								
Yellow pine	53	5	15	33	.89	.05	.22	.62
White pine	39	--	--	39	.55	--	--	.55
Oak-pine	50	15	5	30	.50	.09	.06	.35
Oak-hickory[2]	49	7	10	32	.46	.04	.05	.37
Oak-gum-cypress	58	14	7	37	.65	.09	.02	.54
All types	51	8	11	32	.60	.05	.10	.45
Other stands:								
Yellow pine	2	13	5	-16	.05	.05	.02	-.02
White pine	--	--	--	--	.04	--	--	.04
Oak-pine	5	8	--	-3	.06	.02	--	.04
Oak-hickory[2]	20	5	3	12	.07	.07	.01	-.01
Oak-gum-cypress	4	9	--	-5	.08	.06	--	.02
All types	11	9	3	-1	.07	.05	.01	.01
All stands:								
Yellow pine	165	16	135	14	.86	.09	.58	.19
White pine	200	53	242	-95	.69	.09	.54	.06
Oak-pine	121	20	70	31	.59	.08	.26	.25
Oak-hickory[2]	100	19	66	15	.47	.08	.20	.19
Oak-gum-cypress	149	28	49	72	.64	.11	.12	.41
All types	124	19	86	19	.60	.09	.30	.21

[1] Excludes timber removed in clearing land.
[2] Includes volume in maple-beech-birch type.

Table 33.--Average annual volume of timber cut by tree-size class and species group, 1956

Tree size class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
SAWTIMBER (In million board-feet)					
Small sawtimber	451.9	11.4	49.8	164.2	677.3
Large sawtimber	220.8	36.4	147.4	423.0	827.6
All trees	672.7	47.8	197.2	587.2	1,504.9
GROWING STOCK (In thousand cords)					
Pole trees	1,105	7	152	389	1,653
Small sawtimber	1,326	29	162	524	2,041
Large sawtimber	482	67	345	1,058	1,952
All trees	2,913	103	659	1,971	5,646
GROWING STOCK (In million cubic feet)					
Pole trees	62.8	0.6	9.5	24.1	97.0
Small sawtimber	99.3	2.6	12.2	40.0	154.1
Large sawtimber	40.3	6.3	28.3	86.2	161.1
All trees	202.4	9.5	50.0	150.3	412.2

Table 34.--Net annual change in volume by species group, 1956

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
SAWTIMBER (In million board-feet)					
Net volume, beginning of year	10,953.9	1,251.3	7,382.6	15,621.3	35,209.1
Total growth	791.5	51.2	422.8	703.0	1,968.5
Mortality	69.2	8.7	36.7	141.3	255.9
Net growth	722.3	42.5	386.1	561.7	1,712.6
Timber cut	672.7	47.8	197.2	587.2	1,504.9
Loss or gain	+49.6	-5.3	+188.9	-25.5	+207.7
Net volume, end of year	11,003.5	1,246.0	7,571.5	15,595.8	35,416.8
Percent change	+0.5	-0.4	+2.6	-0.2	+0.6
GROWING STOCK (In thousand cords)					
Net volume, beginning of year	54,544	3,661	34,698	81,576	174,479
Total growth	3,711	155	1,984	3,700	9,550
Mortality	427	25	171	589	1,212
Net growth	3,284	130	1,813	3,111	8,338
Timber cut	2,913	103	659	1,971	5,646
Loss or gain	+371	+27	+1,154	+1,140	+2,692
Net volume, end of year	54,915	3,688	35,852	82,716	177,171
Percent change	+0.7	+0.7	+3.3	+1.4	+1.5
GROWING STOCK (In million cubic feet)					
Net volume, beginning of year	3,879.5	306.5	2,547.2	5,969.8	12,703.0
Total growth	242.7	12.0	133.5	249.0	637.2
Mortality	29.9	2.0	12.6	43.8	88.3
Net growth	212.8	10.0	120.9	205.2	548.9
Timber cut	202.4	9.5	50.0	150.3	412.2
Loss or gain	+10.4	+0.5	+70.9	+54.9	+136.7
Net volume, end of year	3,889.9	307.0	2,618.1	6,024.7	12,839.7
Percent change	+0.3	+0.2	+2.8	+0.9	+1.1

Table 35.--County area by broad use class

County	Total area1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Accomack	385.3	179.5	94.5	(2/)	111.3	38.3
Albemarle	476.8	180.7	0.7	14.1	281.3	59.1
Alleghany	288.6	37.5	0.6	30.4	220.1	76.4
Amelia	234.2	69.6	--	0.1	164.5	70.2
Amherst	300.8	76.2	3.6	0.5	220.5	74.2
Appomattox	220.8	63.1	1.8	0.6	155.3	70.9
Augusta	631.0	278.5	0.1	63.0	289.4	45.9
Bath	345.6	42.0	0.8	46.7	256.1	74.3
Bedford	499.8	189.5	1.0	5.1	304.2	61.0
Bland	236.2	64.3	--	5.8	166.1	70.3
Botetourt	351.4	96.5	0.8	26.7	227.4	64.9
Brunswick	370.6	103.1	0.7	--	266.8	72.1
Buchanan	325.1	47.8	--	--	277.3	85.3
Buckingham	372.5	71.2	5.8	--	295.5	80.6
Campbell	343.7	122.1	1.3	(2/)	220.3	64.3
Caroline	351.4	74.1	3.5	25.0	248.8	71.5
Carroll	318.7	159.4	2.2	6.0	151.1	47.7
Charles City	130.6	29.1	14.2	--	87.3	75.0
Charlotte	301.4	88.5	2.7	--	210.2	70.4
Chesterfield	303.4	67.9	8.1	2.0	225.4	76.3
Clarke	111.3	75.2	0.9	--	35.2	31.9
Craig	215.0	42.8	--	13.2	159.0	74.0
Culpeper	248.9	133.1	--	--	115.8	46.5
Cumberland	186.9	51.5	0.7	--	134.7	72.3
Dickenson	214.4	27.3	--	1.4	185.7	86.6
Dinwiddie	324.5	91.6	0.3	4.6	228.0	70.3
Essex	169.0	53.5	10.0	--	105.5	66.4
Fairfax	270.7	118.7	6.7	1.1	144.2	54.6
Fauquier	422.4	255.9	--	2.0	164.5	38.9
Floyd	245.1	133.5	--	2.4	109.2	44.6
Fluvanna	184.3	59.1	4.5	--	120.7	67.1
Franklin	461.5	168.4	2.1	0.9	290.1	63.1
Frederick	276.5	130.5	0.2	1.8	144.0	52.1
Giles	232.3	64.3	2.2	8.3	157.5	68.4
Gloucester	164.5	44.1	24.3	(2/)	96.1	68.5
Goochland	188.8	51.3	5.2	--	132.3	72.1
Grayson	291.2	150.6	1.9	5.4	133.3	46.1
Greene	97.9	35.7	--	13.8	48.4	49.4
Greensville	193.3	52.7	1.2	(2/)	139.4	72.6
Halifax	517.1	190.0	4.9	1.1	321.1	62.7
Hanover	301.4	91.3	0.5	0.2	209.4	69.6
Henrico	149.8	67.8	2.6	0.5	78.9	53.6
Henry	246.4	80.4	5.5	1.7	158.8	65.9
Highland	266.3	69.9	--	9.7	186.7	70.1
Isle of Wight	230.4	84.3	26.7	0.2	119.2	58.5
James City	116.5	26.6	22.3	1.8	65.8	69.9
King and Queen	209.3	46.2	6.7	--	156.4	77.2
King George	117.1	38.7	4.1	--	74.3	65.8
King William	183.0	44.7	7.0	--	131.3	74.6
Lancaster	97.9	32.0	9.5	--	56.4	63.8
Lee	280.3	136.3	0.1	16.1	127.8	45.6
Loudoun	330.9	232.4	0.1	0.2	98.2	29.7

Table 35.--County area by broad use class (continued)

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Louisa	330.9	102.1	0.5	--	228.3	69.1
Lunenburg	283.5	82.8	--	--	200.7	70.8
Madison	209.3	89.6	--	32.4	87.3	41.7
Mathews	67.2	22.7	15.0	--	29.5	56.5
Mecklenburg	432.0	160.0	37.8	0.1	234.1	59.4
Middlesex	88.3	28.9	5.6	--	53.8	65.1
Montgomery	252.8	96.0	0.5	2.9	153.4	60.8
Nansemond	273.9	90.0	20.0	0.8	163.1	64.2
Nelson	301.4	79.3	1.1	1.2	219.8	73.2
New Kent	141.4	25.7	6.5	--	109.2	80.9
Norfolk	254.7	87.1	26.9	0.2	140.5	61.7
Northampton	228.5	101.1	89.3	--	38.1	27.4
Northumberland	142.7	46.1	21.6	--	75.0	61.9
Nottoway	197.1	53.9	0.3	0.7	142.2	72.3
Orange	227.2	84.1	--	0.2	142.9	62.9
Page	202.2	72.7	0.6	46.8	82.1	40.7
Patrick	300.2	80.8	1.7	6.3	211.4	70.8
Pittsylvania	654.1	246.1	1.6	0.1	406.3	62.3
Powhatan	174.1	38.9	3.8	--	131.4	77.2
Prince Edward	228.5	62.0	--	(2/)	166.5	72.9
Prince George	190.7	53.8	13.7	4.6	118.6	67.0
Prince William	226.6	85.9	4.9	17.8	118.0	53.2
Princess Anne	207.4	100.0	42.9	3.6	60.9	37.0
Pulaski	217.6	95.7	9.7	6.3	105.9	50.9
Rappahannock	170.9	74.4	--	31.7	64.8	37.9
Richmond	129.9	45.0	8.1	--	76.8	63.1
Roanoke	176.6	67.7	--	2.6	106.3	60.2
Rockbridge	386.6	133.4	0.6	27.4	225.2	58.3
Rockingham	556.2	246.9	1.9	78.0	229.4	41.4
Russell	309.1	165.1	0.7	--	143.3	46.5
Scott	345.0	151.1	1.2	5.0	187.7	54.6
Shenandoah	324.5	138.2	0.5	18.3	167.5	51.7
Smyth	278.4	115.8	0.1	4.0	158.5	57.0
Southampton	388.5	132.7	1.1	--	254.7	65.7
Spotsylvania	265.6	71.3	0.8	1.9	191.6	72.4
Stafford	177.3	41.5	4.3	17.6	113.9	65.8
Surry	195.8	43.7	16.9	--	135.2	75.6
Sussex	317.4	66.7	0.6	--	250.1	78.9
Tazewell	334.1	144.8	--	0.3	189.0	56.6
Warren	140.2	55.5	1.1	14.0	69.6	50.0
Washington	370.6	197.3	2.4	0.5	170.4	46.3
Westmoreland	160.0	58.5	11.3	1.4	88.8	59.7
Wise	265.6	64.1	0.4	13.5	187.6	70.7
Wythe	294.4	144.9	1.3	7.0	141.2	48.2
York[3]	215.0	81.4	57.1	4.0	72.5	45.9
State total	25,966.8	9,146.3	707.0	663.6	15,449.9	61.2

[1] Gross area from the Bureau of the Census, 1950. Excludes Arlington County and all independent cities except Hampton and Warwick.

[2] Less than 50 acres.

[3] Includes area in independent cities Hampton and Warwick.

Table 36.--Ownership of commercial forest land by county

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Accomack	108.9	97.8	--	2.4	--	--	2.4	2.2
Albemarle	279.6	99.4	--	--	0.2	1.5	1.7	0.6
Alleghany	116.6	53.0	101.3	--	--	2.2	103.5	47.0
Amelia	164.5	100.0	--	--	--	--	--	--
Amherst	166.5	75.5	53.2	--	0.5	0.3	54.0	24.5
Appomattox	146.2	94.1	--	--	9.1	--	9.1	5.9
Augusta	149.6	51.7	139.5	--	0.1	0.2	139.8	48.3
Bath	128.3	50.1	127.8	--	--	(1/)	127.8	49.9
Bedford	288.1	94.7	14.5	--	--	1.6	16.1	5.3
Bland	146.5	88.2	19.0	--	0.6	--	19.6	11.8
Botetourt	163.0	71.7	52.7	--	--	11.7	64.4	28.3
Brunswick	257.5	96.5	--	5.7	3.5	0.1	9.3	3.5
Buchanan	277.3	100.0	--	--	--	(1/)	(1/)	--
Buckingham	283.0	95.8	2.7	--	9.8	--	12.5	4.2
Campbell	220.1	99.9	--	--	--	0.2	0.2	0.1
Caroline	210.7	84.7	--	37.7	0.1	0.3	38.1	15.3
Carroll	146.0	96.6	4.3	--	--	0.8	5.1	3.4
Charles City	87.2	99.9	--	(1/)	--	0.1	0.1	0.1
Charlotte	208.6	99.2	--	1.6	--	--	1.6	0.8
Chesterfield	218.7	97.0	--	0.9	5.8	--	6.7	3.0
Clarke	35.0	99.4	--	(1/)	(1/)	0.2	0.2	0.6
Craig	60.2	37.9	98.8	--	--	(1/)	98.8	62.1
Culpeper	115.8	100.0	--	--	--	--	--	--
Cumberland	119.3	88.6	--	--	15.4	--	15.4	11.4
Dickenson	177.1	95.4	8.6	--	--	--	8.6	4.6
Dinwiddie	219.3	96.2	--	8.4	0.3	--	8.7	3.8
Essex	105.5	100.0	--	--	--	--	--	--
Fairfax	138.0	95.7	--	6.2	--	--	6.2	4.3
Fauquier	163.3	99.3	--	1.2	--	--	1.2	0.7
Floyd	109.2	100.0	--	--	(1/)	--	(1/)	--
Fluvanna	120.7	100.0	--	--	(1/)	--	(1/)	--
Franklin	287.4	99.1	--	2.7	--	--	2.7	0.9
Frederick	141.3	98.1	2.7	--	--	(1/)	2.7	1.9
Giles	108.1	68.6	48.2	--	1.2	(1/)	49.4	31.4
Gloucester	96.1	100.0	--	--	--	--	--	--
Goochland	132.2	99.9	--	--	0.1	(1/)	0.1	0.1
Grayson	121.6	91.2	11.6	--	--	0.1	11.7	8.8
Greene	48.4	100.0	--	--	--	--	--	--
Greensville	139.3	99.9	--	--	0.1	--	0.1	0.1
Halifax	311.6	97.0	--	9.4	0.1	--	9.5	3.0
Hanover	208.2	99.4	--	--	1.2	(1/)	1.2	0.6
Henrico	77.9	98.7	--	--	--	1.0	1.0	1.3
Henry	157.8	99.4	--	0.9	--	0.1	1.0	0.6
Highland	139.1	74.5	47.6	--	--	--	47.6	25.5
Isle of Wight	119.2	100.0	--	--	--	(1/)	(1/)	--
James City	64.0	97.3	--	1.0	0.7	0.1	1.8	2.7
King and Queen	156.0	99.7	--	--	--	0.4	0.4	0.3
King George	73.4	98.8	--	0.9	--	--	0.9	1.2
King William	130.7	99.5	--	--	0.6	--	0.6	0.5
Lancaster	56.4	100.0	--	--	--	--	--	--

Table 36.--Ownership of commercial forest land by county (continued)

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Lee	118.7	92.9	9.0	--	--	0.1	9.1	7.1
Loudoun	98.2	100.0	--	--	--	--	--	--
Louisa	228.3	100.0	--	--	--	--	--	--
Lunenburg	200.6	100.0	--	0.1	--	--	0.1	(1/)
Madison	87.3	100.0	--	--	--	--	--	--
Mathews	29.5	100.0	--	--	--	--	--	--
Mecklenburg	208.8	89.2	--	24.7	0.3	0.3	25.3	10.8
Middlesex	53.8	100.0	--	--	--	--	--	--
Montgomery	135.6	88.4	14.8	0.8	2.2	(1/)	17.8	11.6
Nansemond	161.4	99.0	--	0.1	--	1.6	1.7	1.0
Nelson	205.7	93.6	12.9	--	(1/)	1.2	14.1	6.4
New Kent	108.4	99.3	--	--	0.8	--	0.8	0.7
Norfolk	136.7	97.3	--	3.8	--	--	3.8	2.7
Northampton	37.8	99.2	--	0.3	--	--	0.3	0.8
Northumberland	75.0	100.0	--	--	--	--	--	--
Nottoway	124.8	87.8	--	17.3	0.1	--	17.4	12.2
Orange	142.9	100.0	--	--	--	--	--	--
Page	64.2	78.2	17.9	--	--	--	17.9	21.8
Patrick	203.7	96.4	--	2.7	--	5.0	7.7	3.6
Pittsylvania	405.8	99.9	--	--	(1/)	0.5	0.5	0.1
Powhatan	129.5	98.6	--	--	1.9	--	1.9	1.4
Prince Edward	159.7	95.9	--	--	6.8	--	6.8	4.1
Prince George	115.5	97.4	--	3.1	--	--	3.1	2.6
Prince William	98.4	83.4	--	19.2	0.4	--	19.6	16.6
Princess Anne	58.2	95.6	--	1.6	0.9	0.2	2.7	4.4
Pulaski	73.6	69.5	16.9	0.2	15.0	0.2	32.3	30.5
Rappahannock	64.8	100.0	--	--	--	--	--	--
Richmond	76.8	100.0	--	--	--	--	--	--
Roanoke	96.2	90.5	1.6	0.1	6.8	1.6	10.1	9.5
Rockbridge	173.1	76.9	46.1	--	0.3	5.7	52.1	23.1
Rockingham	126.3	55.1	101.4	--	--	1.7	103.1	44.9
Russell	143.2	99.9	--	--	(1/)	0.1	0.1	0.1
Scott	157.4	83.9	30.3	--	--	--	30.3	16.1
Shenandoah	110.0	65.7	57.5	--	--	(1/)	57.5	34.3
Smyth	99.2	62.6	59.1	--	0.1	0.1	59.3	37.4
Southampton	252.8	99.3	--	--	1.9	--	1.9	0.7
Spotsylvania	191.6	100.0	--	--	--	--	--	--
Stafford	99.3	87.2	--	14.5	--	0.1	14.6	12.8
Surry	135.2	100.0	--	--	--	--	--	--
Sussex	249.7	99.8	--	--	0.3	0.1	0.4	0.2
Tazewell	184.0	97.4	5.0	--	--	(1/)	5.0	2.6
Warren	63.7	91.5	4.2	1.7	--	--	5.9	8.5
Washington	153.9	90.3	16.2	0.3	(1/)	(1/)	16.5	9.7
Westmoreland	88.8	100.0	--	--	--	--	--	--
Wise	159.1	84.8	26.9	--	--	1.6	28.5	15.2
Wythe	94.0	66.6	45.3	--	(1/)	1.9	47.2	33.4
York	42.5	58.6	--	21.1	(1/)	8.9	30.0	41.4
State total	13,922.7	90.1	1,197.6	190.6	87.2	51.8	1,527.2	9.9

1/ Less than 50 acres, or 0.05 percent.

Table 37.--Net volume[1] of sawtimber by county and species group

(In million board-feet)

County	Softwoods[2]	Gum, yellow-poplar, and soft maple[3]	Oaks and other hard hardwoods	All species
Accomack	228.2	59.9	8.8	296.9
Albemarle	100.3	120.5	292.9	513.7
Alleghany	42.1	1.7	167.8	211.6
Amelia	235.9	132.3	131.1	499.3
Amherst	57.7	49.0	219.0	325.7
Appomattox	80.6	56.0	127.7	264.3
Augusta	57.8	17.3	356.7	431.8
Bath	77.3	14.1	303.2	394.6
Bedford	98.2	86.0	198.6	382.8
Bland	36.8	19.6	153.7	210.1
Botetourt	115.6	124.0	281.3	520.9
Brunswick	413.7	105.8	105.2	624.7
Buchanan	16.2	205.7	240.5	462.4
Buckingham	107.8	56.4	252.6	416.8
Campbell	59.7	54.1	182.7	296.5
Caroline	341.4	211.3	267.5	820.2
Carroll	105.7	21.8	168.5	296.0
Charles City	245.3	38.2	108.5	392.0
Charlotte	98.3	127.4	180.2	405.9
Chesterfield	423.2	91.3	274.4	788.9
Clarke	9.5	28.5	25.5	63.5
Craig	55.9	30.9	132.8	219.6
Culpeper	76.7	34.6	113.0	224.3
Cumberland	76.2	13.7	176.1	266.0
Dickenson	7.7	141.9	258.0	407.6
Dinwiddie	513.2	95.0	204.3	812.5
Essex	177.4	56.9	101.5	335.8
Fairfax	77.6	92.7	295.5	465.8
Fauquier	38.4	42.7	198.0	279.1
Floyd	49.3	36.0	75.6	160.9
Fluvanna	54.0	64.6	97.8	216.4
Franklin	159.3	93.5	184.3	437.1
Frederick	24.2	19.0	208.4	251.6
Giles	12.1	26.7	168.9	207.7
Gloucester	242.1	136.2	171.5	549.8
Goochland	19.1	80.4	117.4	216.9
Grayson	14.9	16.7	159.7	191.3
Greene	16.7	20.2	71.4	108.3
Greensville	254.1	112.1	150.2	516.4
Halifax	233.2	165.9	224.2	623.3
Hanover	289.0	264.0	279.4	832.4
Henrico	59.1	53.7	90.0	202.8
Henry	57.7	31.9	51.5	141.1
Highland	87.2	33.6	293.6	414.4
Isle of Wight	341.2	95.8	179.6	616.6
James City	70.3	37.7	119.7	227.7
King and Queen	255.8	65.4	201.6	522.8
King George	54.5	48.4	107.7	210.6
King William	272.1	66.9	171.1	510.1
Lancaster	75.2	24.1	43.8	143.1
Lee	19.1	42.0	113.3	174.4

Table 37.--Net volume[1] of sawtimber by county and species group (continued)

(In million board-feet)

County	Softwoods[2]	Gum, yellow-poplar, and soft maple[3]	Oaks and other hard hardwoods	All species
Loudoun	13.6	53.3	272.6	339.5
Louisa	106.0	71.3	192.0	369.3
Lunenburg	156.4	94.7	95.9	347.0
Madison	19.6	29.2	128.4	177.2
Mathews	63.2	22.6	15.7	101.5
Mecklenburg	137.8	130.3	174.8	442.9
Middlesex	81.5	47.7	50.2	179.4
Montgomery	34.7	26.8	110.1	171.6
Nansemond	305.2	311.5	133.2	749.9
Nelson	31.2	115.0	199.8	346.0
New Kent	130.7	103.7	134.7	369.1
Norfolk	193.7	158.5	88.6	440.8
Northampton	152.0	8.4	17.2	177.6
Northumberland	118.9	29.5	60.1	208.5
Nottoway	127.7	58.7	77.1	263.5
Orange	58.9	73.6	157.0	289.5
Page	26.5	10.6	94.5	131.6
Patrick	80.3	73.7	118.2	272.2
Pittsylvania	264.3	198.5	354.9	817.7
Powhatan	75.0	66.4	131.6	273.0
Prince Edward	48.9	67.6	82.2	198.7
Prince George	199.0	43.8	115.0	357.8
Prince William	85.6	38.3	207.2	331.1
Princess Anne	78.2	60.3	42.3	180.8
Pulaski	59.5	13.8	26.5	99.8
Rappahannock	5.0	44.5	117.8	167.3
Richmond	71.7	57.6	102.2	231.5
Roanoke	41.9	17.4	47.2	106.5
Rockbridge	120.4	137.2	357.2	614.8
Rockingham	234.1	52.3	371.9	658.3
Russell	4.0	85.7	156.1	245.8
Scott	46.2	86.9	132.2	265.3
Shenandoah	41.1	25.8	217.1	284.0
Smyth	39.6	46.3	165.7	251.6
Southampton	707.9	352.3	263.3	1,323.5
Spotsylvania	74.2	95.9	121.4	291.5
Stafford	30.4	26.6	166.8	223.8
Surry	330.5	83.3	137.9	551.7
Sussex	667.5	208.0	285.8	1,161.3
Tazewell	6.5	44.0	220.5	271.0
Warren	3.7	29.2	47.0	79.9
Washington	76.7	82.1	192.6	351.4
Westmoreland	81.5	41.7	119.7	242.9
Wise	78.3	185.8	266.0	530.1
Wythe	45.0	18.0	132.6	195.6
York	216.0	90.1	114.2	420.3
State total	12,205.2	7,382.6	15,621.3	35,209.1

[1] Log scale, International 1/4-inch rule.
[2] Includes white pine, hemlock, redcedar, whitecedar, and cypress.
[3] Includes other soft hardwoods.

Table 38.--Net volume[1/] of sawtimber by county, broad species group, and diameter group

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Accomack	153.7	48.8	25.7	27.0	31.3	10.4
Albemarle	84.8	8.5	7.0	213.0	120.0	80.4
Alleghany	37.9	4.2	--	61.4	64.4	43.7
Amelia	168.9	54.9	12.1	136.7	54.5	72.2
Amherst	47.4	10.3	--	136.0	59.3	72.7
Appomattox	80.6	--	--	109.5	38.2	36.0
Augusta	43.8	--	14.0	201.0	90.1	82.9
Bath	36.8	9.4	31.1	132.3	109.6	75.4
Bedford	78.4	19.8	--	153.2	53.3	78.1
Bland	22.7	6.5	7.6	91.1	42.5	39.7
Botetourt	51.7	45.8	18.1	188.6	119.2	97.5
Brunswick	353.0	42.9	17.8	133.3	43.2	34.5
Buchanan	6.4	3.2	6.6	188.5	135.1	122.6
Buckingham	91.8	3.4	12.6	181.5	82.6	44.9
Campbell	56.1	3.6	--	141.9	60.2	34.7
Caroline	253.2	82.0	6.2	209.5	134.5	134.8
Carroll	43.5	11.3	50.9	101.0	56.5	32.8
Charles City	175.6	42.7	27.0	82.5	49.0	15.2
Charlotte	98.3	--	--	157.9	69.7	80.0
Chesterfield	262.5	78.0	82.7	177.6	93.7	94.4
Clarke	0.8	1.3	7.4	29.0	14.2	10.8
Craig	37.1	13.8	5.0	88.3	47.3	28.1
Culpeper	70.2	6.5	--	66.1	47.2	34.3
Cumberland	69.1	7.1	--	69.4	21.2	99.2
Dickenson	4.6	3.1	--	136.1	124.9	138.9
Dinwiddie	360.9	120.8	31.5	165.0	86.0	48.3
Essex	118.1	53.8	5.5	85.2	51.0	22.2
Fairfax	70.0	7.6	--	160.7	155.1	72.4
Fauquier	38.4	--	--	96.1	80.3	64.3
Floyd	49.3	--	--	65.3	29.4	16.9
Fluvanna	54.0	--	--	84.7	40.2	37.5
Franklin	125.0	17.6	16.7	165.6	64.5	47.7
Frederick	24.2	--	--	93.2	54.5	79.7
Giles	12.1	--	--	101.5	57.1	37.0
Gloucester	143.8	64.8	33.5	96.6	90.2	120.9
Goochland	15.9	3.2	--	112.4	48.8	36.6
Grayson	14.9	--	--	95.6	70.1	10.7
Greene	15.2	1.5	--	37.5	41.8	12.3
Greensville	201.5	52.6	--	110.5	72.5	79.3
Halifax	188.2	14.6	30.4	218.0	114.7	57.4
Hanover	259.9	21.8	7.3	162.9	168.1	212.4
Henrico	44.5	14.6	--	86.3	43.1	14.3
Henry	42.4	15.3	--	53.0	30.4	--
Highland	46.1	35.1	6.0	175.2	105.1	46.9
Isle of Wight	206.2	108.8	26.2	82.5	67.5	125.4
James City	47.3	12.8	10.2	76.6	63.1	17.7
King and Queen	211.0	38.1	6.7	117.2	101.9	47.9
King George	31.7	10.4	12.4	66.0	39.9	50.2
King William	192.7	33.1	46.3	98.7	80.2	59.1
Lancaster	56.8	15.3	3.1	38.7	21.7	7.5

Table 38.--Net volume[1] of sawtimber by county, broad species group, and diameter group (continued)

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Lee	19.1	--	--	73.3	52.5	29.5
Loudoun	13.6	--	--	93.7	97.5	134.7
Louisa	102.3	3.7	--	194.7	48.8	19.8
Lunenburg	149.6	6.8	--	129.2	49.2	12.2
Madison	19.6	--	--	52.2	40.9	64.5
Mathews	46.7	13.1	3.4	15.0	10.0	13.3
Mecklenburg	122.8	15.0	--	159.5	104.8	40.8
Middlesex	58.2	10.9	12.4	48.1	26.7	23.1
Montgomery	32.5	2.2	--	63.7	49.3	23.9
Nansemond	176.0	114.5	14.7	163.6	123.5	157.6
Nelson	16.9	14.3	--	126.9	100.8	87.1
New Kent	107.3	23.4	--	103.1	72.8	62.5
Norfolk	127.2	59.2	7.3	131.1	68.7	47.3
Northampton	89.1	35.7	27.2	12.4	4.7	8.5
Northumberland	103.2	7.1	8.6	53.7	20.5	15.4
Nottoway	101.9	19.8	6.0	64.0	38.8	33.0
Orange	55.4	3.5	--	98.9	54.9	76.8
Page	25.1	1.4	--	52.3	33.8	19.0
Patrick	53.5	19.0	7.8	80.6	75.5	35.8
Pittsylvania	190.4	48.7	25.2	207.1	154.0	192.3
Powhatan	65.8	9.2	--	133.0	61.0	4.0
Prince Edward	48.9	--	--	59.2	43.7	46.9
Prince George	137.6	30.2	31.2	97.8	50.1	10.9
Prince William	85.6	--	--	97.1	92.5	55.9
Princess Anne	29.4	33.8	15.0	58.3	38.9	5.4
Pulaski	31.3	18.4	9.8	21.8	13.7	4.8
Rappahannock	2.3	2.7	--	52.6	47.4	62.3
Richmond	46.5	12.4	12.8	73.7	50.0	36.1
Roanoke	30.7	3.4	7.8	25.5	20.6	18.5
Rockbridge	72.2	29.7	18.5	240.2	184.8	69.4
Rockingham	77.6	24.7	131.8	198.6	147.7	77.9
Russell	2.2	1.8	--	94.1	75.9	71.8
Scott	5.9	--	40.3	94.5	77.7	46.9
Shenandoah	35.0	6.1	--	125.1	61.8	56.0
Smyth	24.4	12.0	3.2	106.6	54.2	46.2
Southampton	451.4	156.7	99.8	218.4	231.3	165.9
Spotsylvania	70.8	3.4	--	163.0	37.7	16.6
Stafford	30.4	--	--	90.1	70.1	33.2
Surry	249.5	81.0	--	80.7	76.5	64.0
Sussex	435.3	170.7	61.5	217.1	146.4	130.3
Tazewell	6.5	--	--	95.4	52.6	116.5
Warren	3.7	--	--	52.1	15.4	8.7
Washington	39.4	20.3	17.0	127.1	87.0	60.6
Westmoreland	68.1	8.7	4.7	56.5	54.3	50.6
Wise	2.8	16.2	59.3	149.0	144.5	158.3
Wythe	37.8	7.2	--	73.9	44.6	32.1
York	123.3	54.4	38.3	68.9	61.2	74.2
State total	8,723.8	2,250.2	1,231.2	10,650.8	6,813.2	5,539.9

[1] Log scale, International 1/4-inch rule.

Table 39.--Net volume[1/] of all timber by county, species group, and diameter group

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Accomack	581	271	--	--	239	130	132	11	1,364
Albemarle	409	65	53	34	241	230	1,184	638	2,854
Alleghany	109	25	23	13	51	--	526	401	1,148
Amelia	788	270	6	--	337	233	520	261	2,415
Amherst	202	34	18	15	51	85	724	468	1,597
Appomattox	520	40	14	--	62	109	585	230	1,560
Augusta	284	34	30	29	57	30	1,376	688	2,528
Bath	150	41	28	55	143	24	1,196	627	2,264
Bedford	721	62	6	--	482	171	726	393	2,561
Bland	76	38	28	11	135	27	526	334	1,175
Botetourt	186	94	34	83	177	222	942	579	2,317
Brunswick	1,808	351	6	--	424	179	397	201	3,366
Buchanan	--	--	7	31	403	427	611	505	1,984
Buckingham	474	84	34	--	236	96	1,410	460	2,794
Campbell	536	9	--	--	200	86	850	341	2,022
Caroline	1,034	427	2	--	244	439	644	540	3,330
Carroll	85	6	135	121	157	36	678	335	1,553
Charles City	650	277	5	9	180	69	278	204	1,672
Charlotte	808	53	12	--	259	267	503	359	2,261
Chesterfield	1,102	599	--	8	433	144	870	549	3,705
Clarke	9	3	--	12	42	60	123	41	290
Craig	215	76	20	--	77	59	515	278	1,240
Culpeper	320	90	5	--	113	68	411	253	1,260
Cumberland	831	57	30	--	117	13	337	353	1,738
Dickenson	19	8	8	--	315	283	484	577	1,694
Dinwiddie	1,304	664	22	--	393	179	774	438	3,774
Essex	527	221	--	--	135	110	293	192	1,478
Fairfax	594	54	--	--	152	189	428	669	2,086
Fauquier	241	16	4	--	143	98	650	378	1,530
Floyd	45	--	206	24	118	66	180	136	775
Fluvanna	315	20	--	--	143	133	398	191	1,200
Franklin	940	51	60	67	360	139	642	367	2,626
Frederick	208	12	12	4	90	43	730	467	1,566
Giles	25	12	--	6	89	33	547	351	1,063
Gloucester	572	356	--	--	222	285	248	384	2,067
Goochland	292	8	6	--	119	184	512	236	1,357
Grayson	2	--	24	14	38	47	610	336	1,071
Greene	74	11	2	3	29	44	129	155	447
Greensville	738	247	7	6	158	229	263	324	1,972
Halifax	1,387	164	31	--	569	298	901	412	3,762
Hanover	1,571	160	4	--	457	573	452	589	3,806
Henrico	305	60	--	--	138	106	261	172	1,042
Henry	848	52	2	--	110	59	286	92	1,449
Highland	135	30	78	83	155	57	1,033	627	2,198
Isle of Wight	724	488	27	--	208	192	168	387	2,194
James City	184	72	--	7	127	79	297	249	1,015
King and Queen	1,072	241	--	--	439	102	418	413	2,685
King George	277	71	5	--	132	96	269	219	1,069
King William	725	343	4	--	191	131	425	367	2,186
Lancaster	323	72	--	--	95	44	176	67	777

Table 39.--Net volume[1] of all timber by county, species group, and diameter group (continued)

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Lee	8	--	36	6	144	73	398	244	909
Loudoun	107	--	--	--	39	120	469	625	1,360
Louisa	612	53	19	--	329	113	904	309	2,339
Lunenburg	924	52	14	--	399	144	529	147	2,209
Madison	109	8	--	--	90	55	250	299	811
Mathews	133	74	--	--	43	44	83	25	402
Mecklenburg	1,011	77	12	--	369	248	807	336	2,860
Middlesex	244	71	4	24	121	84	161	101	810
Montgomery	155	22	89	6	110	43	492	247	1,164
Nansemond	389	476	29	35	705	608	270	283	2,795
Nelson	131	27	13	12	353	228	483	439	1,686
New Kent	436	114	--	--	149	203	251	243	1,396
Norfolk	279	264	3	21	454	293	137	177	1,628
Northampton	241	241	--	--	28	19	49	32	610
Northumberland	458	71	--	--	126	39	211	114	1,019
Nottoway	457	145	12	--	212	111	220	161	1,318
Orange	476	50	40	--	94	153	696	278	1,787
Page	136	8	21	6	45	26	396	189	827
Patrick	246	28	20	58	229	136	717	267	1,701
Pittsylvania	1,753	229	38	8	769	376	969	761	4,903
Powhatan	349	26	13	--	191	127	458	245	1,409
Prince Edward	605	6	6	--	130	133	520	156	1,556
Prince George	678	221	--	--	243	84	431	211	1,868
Prince William	522	41	9	--	80	68	674	437	1,831
Princess Anne	67	130	--	3	257	98	120	86	761
Pulaski	156	80	7	11	49	32	227	55	617
Rappahannock	6	6	2	--	114	84	164	277	653
Richmond	282	106	--	--	160	119	298	202	1,167
Roanoke	180	25	36	17	106	32	231	103	730
Rockbridge	194	48	65	107	106	290	931	792	2,533
Rockingham	277	54	88	262	150	106	928	821	2,686
Russell	2	3	6	2	189	159	329	345	1,035
Scott	19	--	28	72	259	172	363	289	1,202
Shenandoah	296	20	3	13	42	50	988	439	1,851
Smyth	90	46	25	8	175	85	580	316	1,325
Southampton	1,128	732	92	224	702	714	554	565	4,711
Spotsylvania	648	32	14	--	395	199	681	207	2,176
Stafford	364	12	--	--	156	41	451	320	1,344
Surry	818	378	23	20	322	160	170	309	2,200
Sussex	1,455	833	16	21	557	388	709	563	4,542
Tazewell	13	10	2	4	215	78	547	479	1,348
Warren	32	5	8	--	74	58	472	70	719
Washington	118	40	39	69	266	145	602	429	1,708
Westmoreland	327	74	--	--	147	74	276	260	1,158
Wise	5	10	15	132	363	375	644	621	2,165
Wythe	129	50	26	12	64	30	588	260	1,159
York	345	352	2	--	180	193	290	242	1,604
State total	42,755	11,789	1,873	1,788	20,485	14,213	49,356	32,220	174,479

---

[1] Sound wood and bark.

Table 39.--Net volume[1] of all timber by county, species group, and diameter group (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Accomack	110	25	--	--	121	36	24	7	323
Albemarle	41	--	--	--	21	40	181	63	346
Alleghany	44	5	--	--	24	35	279	360	747
Amelia	40	4	--	--	60	56	106	12	278
Amherst	87	--	6	--	48	9	240	96	486
Appomattox	56	5	--	--	3	66	49	15	194
Augusta	104	--	20	14	24	61	322	392	937
Bath	26	--	--	7	35	40	482	323	913
Bedford	84	8	2	5	116	50	368	202	835
Bland	31	--	5	4	11	21	93	219	384
Botetourt	25	5	12	5	18	3	151	185	404
Brunswick	--	13	--	--	59	42	48	12	174
Buchanan	2	5	--	--	66	129	322	537	1,061
Buckingham	46	42	--	--	37	8	200	31	364
Campbell	71	4	--	--	15	17	139	47	293
Caroline	83	14	--	--	84	14	123	73	391
Carroll	7	--	8	--	47	18	271	93	444
Charles City	10	3	--	--	25	29	46	20	133
Charlotte	129	25	--	--	28	--	26	59	267
Chesterfield	17	21	--	--	27	36	69	14	184
Clarke	5	2	--	--	10	3	50	21	91
Craig	52	--	--	--	5	27	208	207	499
Culpeper	69	15	--	--	54	31	105	18	292
Cumberland	118	--	2	--	23	--	27	18	188
Dickenson	--	--	--	--	12	58	129	220	419
Dinwiddie	--	22	--	--	23	19	58	21	143
Essex	34	9	--	--	6	3	32	74	158
Fairfax	103	4	--	--	23	38	60	152	380
Fauquier	189	34	--	--	55	8	130	100	516
Floyd	42	--	6	--	90	20	33	147	338
Fluvanna	40	--	--	--	24	87	123	48	322
Franklin	126	9	38	8	160	92	210	149	792
Frederick	23	--	--	--	4	--	89	92	208
Giles	19	6	3	25	72	33	213	219	590
Gloucester	26	6	--	--	43	21	29	10	135
Goochland	48	--	5	--	5	10	72	--	140
Grayson	--	5	--	--	101	35	196	110	447
Greene	9	--	--	--	10	22	27	36	104
Greensville	13	6	--	21	73	13	51	15	192
Halifax	46	10	--	--	66	16	83	30	251
Hanover	36	5	--	--	43	36	39	14	173
Henrico	9	--	--	--	18	26	38	4	95
Henry	166	7	--	4	54	16	210	57	514
Highland	12	--	19	--	36	32	324	301	724
Isle of Wight	14	8	8	--	57	35	38	83	243
James City	--	--	--	--	15	2	24	19	60
King and Queen	47	12	--	--	11	115	12	87	284
King George	28	2	--	--	16	8	17	18	89
King William	8	10	--	--	87	21	39	65	230
Lancaster	21	5	--	--	--	10	19	12	67

Table 39.--Net volume[1] of all timber by county, species group, and diameter group (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Lee	--	--	--	--	90	57	149	69	365
Loudoun	26	--	--	--	22	11	49	80	188
Louisa	90	24	--	4	114	25	103	63	423
Lunenburg	73	--	--	--	124	12	88	44	341
Madison	27	3	4	--	12	33	182	118	379
Mathews	9	3	--	--	11	12	15	2	52
Mecklenburg	39	9	--	--	102	17	44	54	265
Middlesex	21	4	--	--	12	12	29	22	100
Montgomery	84	4	3	2	24	16	113	117	363
Nansemond	--	--	--	--	44	71	74	38	227
Nelson	46	8	6	10	200	21	356	246	893
New Kent	42	14	--	--	18	23	39	43	179
Norfolk	16	5	--	--	82	60	41	7	211
Northampton	13	--	--	--	13	3	12	5	46
Northumberland	16	--	--	--	46	16	38	26	142
Nottoway	24	8	--	--	26	8	19	17	102
Orange	25	--	--	--	21	--	61	6	113
Page	30	--	7	--	3	--	31	49	120
Patrick	32	12	2	--	181	46	285	185	743
Pittsylvania	138	18	--	--	41	40	77	89	403
Powhatan	24	--	--	--	36	--	27	11	98
Prince Edward	45	5	--	--	75	10	44	71	250
Prince George	--	--	--	--	9	12	18	16	55
Prince William	39	--	--	--	31	15	25	31	141
Princess Anne	7	--	--	--	55	26	39	17	144
Pulaski	47	--	1	--	70	25	53	21	217
Rappahannock	3	--	12	--	15	18	79	47	174
Richmond	34	8	--	--	31	36	47	11	167
Roanoke	36	6	--	--	18	33	100	72	265
Rockbridge	34	17	4	--	114	34	341	319	863
Rockingham	30	18	2	--	28	28	272	353	731
Russell	--	--	1	1	32	39	54	44	171
Scott	32	--	3	15	63	114	244	311	782
Shenandoah	69	13	--	--	15	13	196	147	453
Smyth	--	--	--	--	14	26	41	76	157
Southampton	11	--	--	--	99	204	87	13	414
Spotsylvania	104	5	--	--	33	44	55	47	288
Stafford	38	--	--	--	7	16	37	28	126
Surry	5	6	--	--	13	55	57	52	188
Sussex	--	10	--	66	43	70	25	50	264
Tazewell	7	4	--	--	85	47	297	282	722
Warren	9	--	--	--	24	12	51	21	117
Washington	2	1	--	6	18	20	45	84	176
Westmoreland	50	--	--	--	7	3	19	12	91
Wise	2	--	9	--	41	114	151	201	518
Wythe	35	8	--	--	44	110	229	152	578
York	1	--	--	--	17	8	7	5	38
State total	3,731	569	188	197	4,288	3,162	10,669	8,881	31,685

---

[1] Sound wood and bark.

Table 40.--Average annual volume of sawtimber cut by county and species group[1]

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Accomack	55.8	--	--	2.2	58.0
Albemarle	4.0	1.2	--	3.6	8.8
Alleghany	0.2	1.2	--	3.9	5.3
Amelia	1.6	0.9	--	--	2.5
Amherst	12.2	0.4	1.7	6.8	21.1
Appomattox	5.1	--	7.3	3.2	15.6
Augusta	--	--	4.3	22.7	27.0
Bath	--	--	--	--	--
Bedford	5.0	--	4.3	12.8	22.1
Bland	--	--	--	2.6	2.6
Botetourt	0.6	--	11.2	7.9	19.7
Brunswick	10.2	--	--	1.1	11.3
Buchanan	--	--	1.0	5.2	6.2
Buckingham	8.1	--	--	8.6	16.7
Campbell	9.4	--	3.0	4.2	16.6
Caroline	32.4	--	1.0	3.8	37.2
Carroll	0.6	16.2	--	1.4	18.2
Charles City	4.7	--	--	1.7	6.4
Charlotte	6.2	--	2.2	7.6	16.0
Chesterfield	22.9	--	1.5	14.4	38.8
Clarke	--	--	--	1.1	1.1
Craig	--	--	--	--	--
Culpeper	1.9	--	--	4.7	6.6
Cumberland	2.6	--	--	9.3	11.9
Dickenson	--	--	0.7	--	0.7
Dinwiddie	34.7	--	5.7	7.3	47.7
Essex	0.8	--	5.3	6.8	12.9
Fairfax	1.0	0.5	0.3	15.6	17.4
Fauquier	5.3	0.8	--	8.6	14.7
Floyd	0.3	5.0	1.3	7.0	13.6
Fluvanna	5.4	--	--	4.4	9.8
Franklin	6.8	1.6	4.3	9.8	22.5
Frederick	5.6	0.2	0.9	18.8	25.5
Giles	--	--	1.1	1.4	2.5
Gloucester	2.9	--	6.5	1.1	10.5
Goochland	10.8	--	4.1	4.3	19.2
Grayson	--	2.6	13.7	5.7	22.0
Greene	--	--	2.2	2.0	4.2
Greensville	34.0	--	7.6	6.3	47.9
Halifax	19.5	--	6.3	34.3	60.1
Hanover	18.9	--	12.2	1.3	32.4
Henrico	2.2	--	8.8	3.9	14.9
Henry	9.0	--	--	5.1	14.1
Highland	--	--	--	2.8	2.8
Isle of Wight	14.1	--	4.8	3.4	22.3
James City	8.9	--	2.1	10.6	21.6
King and Queen	12.7	--	--	9.8	22.5
King George	2.1	--	0.2	8.1	10.4
King William	10.3	--	1.3	7.8	19.4
Lancaster	0.9	--	0.9	7.0	8.8
Lee	--	--	--	--	--

Table 40.--Average annual volume of sawtimber cut by county and species group[1] (continued)

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Loudoun	--	0.1	--	6.0	6.1
Louisa	6.9	--	1.1	12.8	20.8
Lunenburg	9.9	0.3	6.0	6.4	22.6
Madison	0.7	--	4.8	4.1	9.6
Mathews	14.3	--	--	--	14.3
Mecklenburg	9.2	--	1.4	16.6	27.2
Middlesex	5.3	--	--	3.4	8.7
Montgomery	--	--	--	--	--
Nansemond	15.9	--	0.9	7.9	24.7
Nelson	6.2	7.0	7.7	2.9	23.8
New Kent	31.9	--	--	5.0	36.9
Norfolk	5.3	--	3.3	26.3	34.9
Northampton	6.6	--	0.1	0.3	7.0
Northumberland	0.7	--	3.9	--	4.6
Nottoway	20.4	--	1.8	4.4	26.6
Orange	4.6	--	2.5	2.5	9.6
Page	--	--	1.3	4.9	6.2
Patrick	0.3	--	0.7	1.1	2.1
Pittsylvania	1.9	--	1.4	6.3	9.6
Powhatan	3.9	--	4.2	1.4	9.5
Prince Edward	3.9	--	--	3.2	7.1
Prince George	12.2	--	0.9	5.1	18.2
Prince William	--	--	--	9.0	9.0
Princess Anne	11.0	--	2.0	3.3	16.3
Pulaski	--	--	--	8.8	8.8
Rappahannock	0.3	--	--	1.4	1.7
Richmond	6.5	--	--	14.2	20.7
Roanoke	0.2	1.2	3.2	3.4	8.0
Rockbridge	0.2	--	--	2.6	2.8
Rockingham	--	--	--	1.1	1.1
Russell	--	--	1.5	4.4	5.9
Scott	--	1.2	2.8	5.7	9.7
Shenandoah	1.7	3.4	--	--	5.1
Smyth	0.4	1.2	1.8	0.9	4.3
Southampton	17.2	--	4.3	14.8	36.3
Spotsylvania	10.3	--	0.6	2.1	13.0
Stafford	12.4	--	2.5	22.4	37.3
Surry	11.3	--	2.6	1.7	15.6
Sussex	44.1	2.8	3.0	7.1	57.0
Tazewell	--	--	1.6	20.1	21.7
Warren	0.2	--	--	3.0	3.2
Washington	--	--	0.3	5.2	5.5
Westmoreland	1.1	--	0.3	7.2	8.6
Wise	--	--	--	0.4	0.4
Wythe	--	--	--	1.3	1.3
York	6.0	--	0.9	4.5	11.4
State total	672.7	47.8	197.2	587.2	1,504.9

[1] Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 41.--Average annual volume of growing stock cut by county and species group[1]

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Accomack	132	--	1	6	139
Albemarle	43	3	1	11	58
Alleghany	9	3	--	31	43
Amelia	5	2	1	--	8
Amherst	63	1	8	31	103
Appomattox	25	--	16	12	53
Augusta	--	--	10	66	76
Bath	1	--	--	1	2
Bedford	55	--	28	49	132
Bland	--	--	--	9	9
Botetourt	4	--	26	31	61
Brunswick	65	1	1	5	72
Buchanan	--	--	5	15	20
Buckingham	46	--	--	37	83
Campbell	42	--	10	13	65
Caroline	158	--	3	15	176
Carroll	3	28	1	7	39
Charles City	19	--	--	5	24
Charlotte	49	--	11	22	82
Chesterfield	86	--	19	52	157
Clarke	--	--	--	3	3
Craig	5	2	--	4	11
Culpeper	6	--	--	15	21
Cumberland	18	--	--	26	44
Dickenson	--	--	2	--	2
Dinwiddie	149	--	21	36	206
Essex	3	--	15	18	36
Fairfax	13	1	5	65	84
Fauquier	19	2	1	36	58
Floyd	3	12	4	24	43
Fluvanna	50	--	1	17	68
Franklin	46	5	17	37	105
Frederick	14	1	3	55	73
Giles	--	--	4	8	12
Gloucester	14	--	15	3	32
Goochland	92	1	10	10	113
Grayson	--	5	33	34	72
Greene	--	--	5	5	10
Greensville	112	--	23	19	154
Halifax	96	--	24	103	223
Hanover	71	--	26	6	103
Henrico	9	--	21	11	41
Henry	41	--	--	15	56
Highland	--	--	--	9	9
Isle of Wight	42	--	14	25	81
James City	23	--	8	32	63
King and Queen	42	--	3	30	75
King George	13	--	1	22	36
King William	45	--	5	20	70
Lancaster	2	--	5	21	28
Lee	--	--	--	--	--

Table 41.--Average annual volume of growing stock cut by county and species group1/ (continued)

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Loudoun	--	--	--	14	14
Louisa	60	--	4	41	105
Lunenburg	55	1	20	23	99
Madison	23	--	10	13	46
Mathews	36	--	--	--	36
Mecklenburg	48	--	10	68	126
Middlesex	14	--	1	13	28
Montgomery	--	--	--	3	3
Nansemond	48	--	4	18	70
Nelson	25	13	20	10	68
New Kent	97	--	1	14	112
Norfolk	12	--	8	62	82
Northampton	17	--	2	1	20
Northumberland	2	--	10	--	12
Nottoway	78	--	11	27	116
Orange	31	--	10	14	55
Page	--	--	4	16	20
Patrick	2	--	5	19	26
Pittsylvania	62	--	6	23	91
Powhatan	30	--	10	6	46
Prince Edward	28	--	1	16	45
Prince George	48	--	5	14	67
Prince William	1	--	--	27	28
Princess Anne	30	--	6	8	44
Pulaski	--	--	--	21	21
Rappahannock	4	--	--	3	7
Richmond	26	--	2	38	66
Roanoke	3	4	11	9	27
Rockbridge	5	--	--	10	15
Rockingham	--	--	--	3	3
Russell	--	--	4	14	18
Scott	--	4	16	21	41
Shenandoah	17	6	--	1	24
Smyth	1	3	4	2	10
Southampton	49	--	24	51	124
Spotsylvania	87	--	3	9	99
Stafford	44	--	9	64	117
Surry	33	--	7	5	45
Sussex	142	5	12	20	179
Tazewell	2	--	4	59	65
Warren	2	--	--	15	17
Washington	--	--	3	14	17
Westmoreland	3	--	2	20	25
Wise	--	--	--	1	1
Wythe	--	--	--	3	3
York	15	--	3	11	29
State total	2,913	103	659	1,971	5,646

1/ Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Standard Tables

The tables which appear on the following pages have been standardized as to format and contents so that forest statistics for Virginia can be compared or combined with similar statistics for other states. This practice is being followed to provide readers with comparable data on forest area, timber volumes, growth, and timber cut for each state as the initial surveys or resurveys are completed.

Table I.--Land area by major classes of land,

Virginia, 1957

Class of land	Area
	Thousand acres
Forest:	
Commercial	15,450
Noncommercial:	
Productive-reserved	260
Unproductive	404
Total forest land	16,114
Nonforest land[1]	9,293
Total, all classes	25,407

[1] Excludes 125,000 acres classified as water by Forest Survey standards but defined by the Bureau of the Census as land area.

Table II.--Commercial forest land area by ownership and stand-size class,

Virginia, 1957

(In thousand acres)

Ownership class	Total	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Nonstocked & other areas[1]
Federally owned or managed:					
National forest	1,198	502	600	62	34
Indian	--	--	--	--	--
Bur. Land Mgmt.	--	--	--	--	--
Other	190	124	53	13	--
Total Federal	1,388	626	653	75	34
State	87	51	23	10	3
County & municipal	52	33	3	16	--
Private:					
Farm	10,085	4,498	4,216	1,200	171
Wood-using industries	1,239	730	397	100	12
Other	2,599	1,066	1,182	296	55
All ownerships	15,450	7,004	6,474	1,697	275

[1] Includes areas not classified elsewhere.

Table III.--Area of commercial forest land by major forest types, Virginia, 1957

Forest type	Thousand acres
White-red-jack pine	118
Spruce-fir	--
Loblolly-shortleaf pine	2,944
Virginia pine	1,441
Oak-pine	1,406
Oak-hickory	8,553
Oak-gum-cypress	936
Elm-ash-cottonwood	--
Maple-beech-birch	52
Aspen-birch	--
Total	15,450

Table IV.--Net volume of live sawtimber and growing stock on commercial forest land by stand-size class, Virginia, 1957

Stand-size class	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Sawtimber stands	31,120	9,343
Poletimber stands	3,793	3,247
Seedling & sapling stands	224	92
Nonstocked and other areas not elsewhere classified	72	21
Total	35,209	12,703

Table V.--Net volume of live sawtimber and growing stock on commercial forest land by ownership class, Virginia, 1957

Ownership class	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Federally owned or managed:		
National forest	2,419	867
Indian	--	--
Bureau of Land Mgmt.	--	--
Other	662	212
Total Federal	3,081	1,079
State	211	92
County & municipal	176	50
Private:		
Farm	22,362	8,220
Wood-using industries	4,169	1,323
Other	5,210	1,939
Total private	31,741	11,482
All ownerships	35,209	12,703

Table VI.--Net volume of live sawtimber and growing stock on commercial forest land by species, Virginia, 1957

Species	Sawtimber	Growing stock
	Million bd.-ft.	Million cu. ft.
Softwoods:		
Shortleaf and loblolly pines	9,260	2,932
Other southern yellow pines	1,694	948
White pine	550	132
Hemlock	407	86
Cypress	228	46
Other eastern softwoods	66	42
Total softwoods	12,205	4,186
Hardwoods:		
White & swamp chestnut oaks	3,636	1,423
Other white oaks	2,399	993
Northern red, swamp red, & shumard oaks	1,766	539
Other red oaks	3,981	1,491
Yellow birch	20	10
Sugar maple	160	59
Soft maple	922	387
Beech	616	183
Sweetgum	1,532	568
Tupelo and blackgum	1,069	370
Ash	260	122
Hickory	2,177	813
Cottonwood and aspen	3	1
Basswood	213	66
Yellow-poplar	2,895	881
Black walnut	174	70
Other eastern hardwoods	1,181	541
Total hardwoods	23,004	8,517
All species	35,209	12,703

Table VII.--Net volume of live sawtimber on commercial forest land by diameter-class group and species, Virginia, 1957

(In million board-feet)

Species	Diameter-class groups						Total
	10-inch	12-inch	14-inch	16-inch	18-inch	20-inch and larger	
So. yellow pines	3,087	3,009	2,153	1,223	724	758	10,954
White pine	71	104	87	101	50	137	550
Other eastern softwoods	61	81	71	75	77	336	701
Total softwoods	3,219	3,194	2,311	1,399	851	1,231	12,205
White & swamp chestnut oaks	--	965	939	584	439	709	3,636
Other white oaks	--	620	542	364	242	631	2,399
No. red, swamp red, & shumard oaks	--	265	311	247	276	667	1,766
Other red oaks	--	912	924	664	467	1,014	3,981
Yellow birch	--	2	11	--	3	4	20
Sugar maple	--	27	39	29	19	46	160
Beech	--	72	93	90	117	244	616
Sweetgum	--	426	392	278	198	238	1,532
Tupelo & blackgum	--	240	227	231	147	224	1,069
Yellow-poplar	--	621	635	505	453	681	2,895
Other eastern hardwoods	--	1,181	1,208	861	598	1,082	4,930
Total hardwoods	--	5,331	5,321	3,853	2,959	5,540	23,004
All species	3,219	8,525	7,632	5,252	3,810	6,771	35,209

Table VIII.--Net volume of all timber on commercial forest land by class of material and species group, Virginia, 1957

(In million cubic feet)

Class of material	Total	Softwoods	Hardwoods
Growing stock:			
Sawtimber trees:			
Saw-log portion	5,794	2,052	3,742
Upper stem portion	1,853	536	1,317
Total sawtimber	7,647	2,588	5,059
Poletimber trees	5,056	1,598	3,458
Total growing stock	12,703	4,186	8,517
Other material:			
Sound cull trees	2,132	325	1,807
Rotten cull trees	194	8	186
Hardwood limbs	646	--	646
Salvable dead trees	6	2	4
Total other material	2,978	335	2,643
Total, all timber	15,681	4,521	11,160

Table IX.--Net annual growth, annual mortality, and annual cut of live sawtimber and growing stock on commercial forest land by species group, Virginia, 1956

Item	Sawtimber			Growing stock		
	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
	Million board-feet			Million cubic feet		
Net annual growth	1,713	765	948	549	223	326
Annual mortality	256	78	178	88	32	56
Annual timber cut						
Timber products	1,472	715	757	369	200	169
Logging residues	33	6	27	43	12	31
Total cut	1,505	721	784	412	212	200

Table X.--Output of timber products and annual cut of live sawtimber and growing stock, Virginia, 1956

Product	Output of timber products					Annual cut of sawtimber			Annual cut of growing stock		
	Volume in standard units		Roundwood volume								
	Standard units	Number	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
			Thousand cubic feet			Thousand board-feet			Thousand cubic feet		
Saw logs	M bd.-ft.[1]	1,327,593	221,523	110,213	111,310	1,180,332	542,772	637,560	247,526	116,788	130,738
Veneer logs and bolts	M bd.-ft.[1]	69,780	10,201	430	9,771	78,871	1,794	77,077	12,541	462	12,079
Cooperage logs and bolts	M bd.-ft.[1]	10,056	1,757	1,490	267	8,291	7,122	1,169	1,807	1,545	262
Pulpwood[2]	Std. cords[3]	1,629,706	110,617	85,305	25,312	168,980	136,917	32,063	86,361	65,948	20,413
Fuelwood[2]	Std. cords[4]	1,113,636	68,204	30,372	37,832	--	--	--	41,220	17,818	23,402
Piling	M linear ft.	3,143	1,820	1,454	366	12,337	9,879	2,458	1,914	1,529	385
Poles	M pieces	29	893	801	92	5,861	5,261	600	957	842	115
Posts	M pieces	5,667	4,488	2,114	2,374	2,549	1,454	1,095	3,294	1,319	1,975
Mine timbers	M cu. ft.	5,827	5,827	683	5,144	12,815	1,382	11,433	5,419	697	4,722
Miscellaneous[5]	M cu. ft.	10,477	10,477	5,383	5,094	34,864	13,919	20,945	11,161	4,952	6,209
Total	--	--	435,807	238,245	197,562	1,504,900	720,500	784,400	412,200	211,900	200,300

[1] International 1/4-inch rule.

[2] Rough wood basis.

[3] Not including 1,88[illegible] thousand cubic feet of wood from mill residues used for pulp and other fibre.

[4] Not including 17,845 thousand cubic feet of wood from mill residues used for domestic and industrial fuel.

[5] Includes excelsior bolts, handle stock, farm timbers, etc.

Table XI.--Twenty-five-year growth and volume outlook for sawtimber, growing stock, and cull timber in Virginia

SAWTIMBER (In million board-feet)

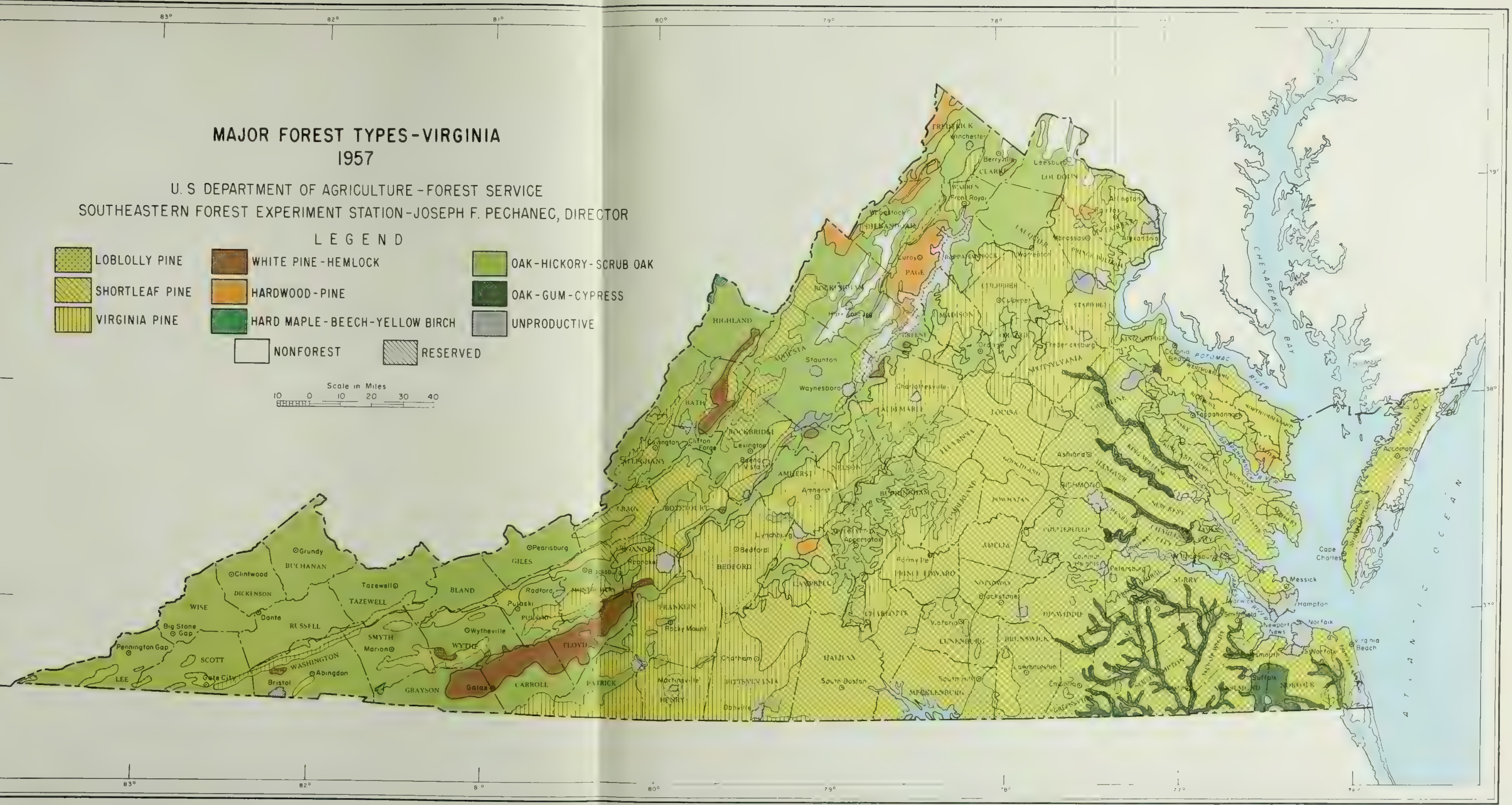
Species group	Net annual growth		Net inventory volume		
	1956	1982[2]	1957	1982[2]	Net change
Softwoods	765	849	12,205	13,056	+851
Preferred hardwoods[3]	509	777	10,636	16,110	+5,474
Other hardwoods	439	725	12,368	18,080	+5,712
Total	1,713	2,351	35,209	47,246	+12,037
GROWING STOCK (In million cubic feet)					
Softwoods	223	234	4,186	4,543	+357
Preferred hardwoods	159	220	3,728	5,539	+1,811
Other hardwoods	167	248	4,789	7,133	+2,344
Total	549	702	12,703	17,215	+4,512
CULLS (In million cubic feet)					
All species	126	146	2,326	3,345	+1,019
ALL TIMBER (In million cubic feet)					
All species	675	848	15,029	20,560	+5,531

[1] International 1/4-inch rule.

[2] Projected growth and inventory based on continuation of current annual cut and mortality rates.

[3] Preferred hardwoods include yellow-poplar, sweetgum, white oak, black walnut, basswood, ash, northern red oak, and hard maple.

Agriculture - Asheville



MAJOR FOREST TYPES-VIRGINIA
1957

U. S DEPARTMENT OF AGRICULTURE-FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION-JOSEPH F. PECHANEC, DIRECTOR

Southeastern Forest Experiment Station
P. O. Box 2570, Asheville, N. C.

Forest Survey Reports Published Since 1945

Forest Statistics:

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
No. 26 - 1946 Commodity Drain by County from South Carolina Forests
No. 28 - South Carolina's Forest Resources, 1947
No. 30 - Forest Resources of Northeast Florida, 1949
No. 31 - Forest Resources of Central Florida, 1949
No. 32 - Forest Resources of Northwest Florida, 1949
No. 33 - Forest Resources of South Florida, 1949
No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
No. 36 - Forest Statistics for Florida, 1949
No. 37 - Forest Statistics for Southwest Georgia, 1951
No. 39 - Forest Statistics for Southeast Georgia, 1952
No. 40 - Forest Statistics for Central Georgia, 1952
No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952
No. 42 - Forest Statistics for North Central and North Georgia, 1953
No. 44 - Forest Statistics for Georgia, 1951-53
No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955 (out of print)
No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
No. 49 - North Carolina's Timber Supply, 1955
No. 50 - Forest Statistics for the Coastal Plain of Virginia, 1956
No. 51 - Forest Statistics for the Piedmont of Virginia, 1957
No. 52 - Forest Statistics for the Mountain Region of Virginia, 1957

Pulpwood Production:

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
No. 23 - 1946 Pulpwood Production by County in the Southeast
No. 27 - 1947 Pulpwood Production by County in the Southeast
No. 29 - 1948 Pulpwood Production by County in the Southeast
*No. 35 - 1949 Pulpwood Production in the South (out of print)
*No. 69 - Pulpwood Production in the South, 1950
*No. 38 - 1951 Pulpwood Production in the South
*No. 72 - 1952 Pulpwood Production in the South
*No. 43 - 1953 Pulpwood Production in the South
*No. 76 - 1954 Pulpwood Production in the South
*No. 47 - 1955 Pulpwood Production in the South (out of print)
*No. 80 - 1956 Pulpwood Production in the South
*No. 53 - 1957 Pulpwood Production in the South

Other Reports

Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

---

*Published in cooperation with the Southern Forest Experiment Station, New Orleans, La.

FOREST SURVEY RELEASE NO. 55 AUGUST 1960

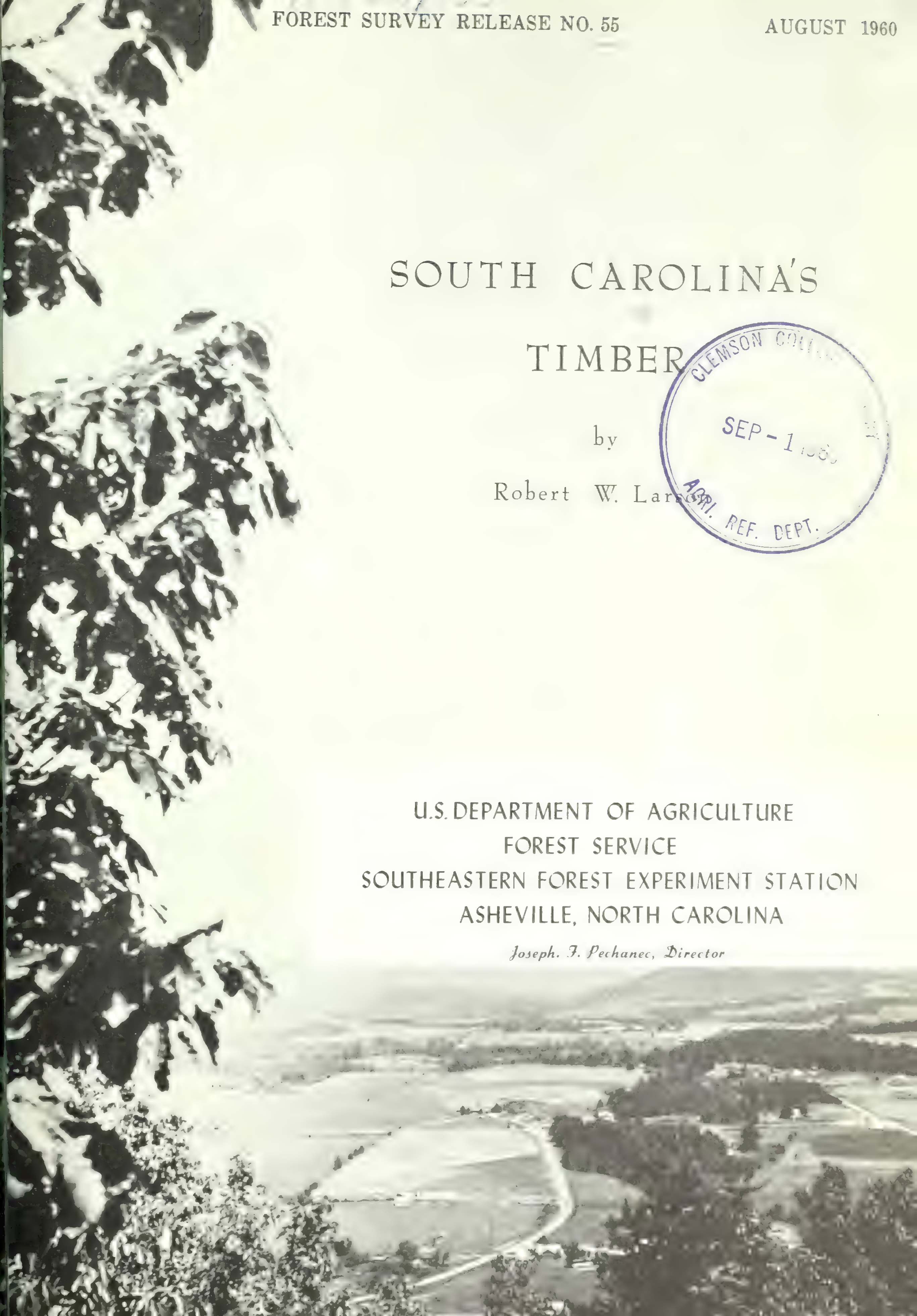
SOUTH CAROLINA'S TIMBER

by

Robert W. Larson

CLEMSON COLL
SEP - 1 1960
AGRI. REF. DEPT.

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
Joseph. F. Pechanec, Director



ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges financial assistance provided by the South Carolina State Commission of Forestry and the following cooperators:

Bowaters Southern Paper Corp.
Champion Paper and Fibre Co.
Continental Can Company, Inc.
Mead Corporation
Sonoco Products Company
Union Bag-Camp Paper Corp.

Ben Alderman
Lightsey Brothers
Poinsett Lumber Company
Tilghman Lumber Company
U. S. Plywood Corp.

The Station also wishes to acknowledge the valuable assistance of J. R. Dixon, West Virginia Pulp and Paper Company, and Michael R. Sorokach, International Paper Company.

The Forest Survey is a function of the Division of Forest Economics Research of the Southeastern Forest Experiment Station, and was directed by the late J. F. McCormack. The South Carolina Forest Survey was directed and organized by Mackay B. Bryan. Joe P. McClure supervised the collection of the field data. Aerial photo preparation and land-use classification was done by William H. B. Haines. The field party included:

Thomas R. Bellamy
Arthur P. Clow, Jr.
Philip L. Howard
Davie L. Hunt
Herbert A. Knight

Paul F. Lawson, Jr.
Robert B. Manney
Carl E. R. Nelson
Edward J. Noble
James F. Parnell

Robert F. Petracca
Oren W. Risher, Jr.
Clyde D. Steel
Richard L. Welch

Agnes C. Nichols supervised the office compilation. Key punching and machine tabulating were done by Louise Shuford and Joanne Hutchison. Sammy Wenningham assisted in preparing the statistical tables. The author is especially indebted to Camilla Young for her assistance in preparing the report for publication. A special study conducted by Ronald C. Froelich provided a more accurate estimate of the unusable cull portions of the timber.

All photographs in this report were provided by the South Carolina State Commission of Forestry.

HIGHLIGHTS

Total timber volume in South Carolina is increasing but size and quality is decreasing. The total inventory volume in hardwood trees increased 16 percent, but growth of softwood timber barely replaced the cut and mortality over the past 22 years. The volume of softwood growing stock, timber now or prospectively suitable for saw logs, dropped 6 percent, and the volume of large sawtimber, trees 15.0 inches and larger, dropped 30 percent. Hardwood growing stock increased 8 percent but large sawtimber dropped 16 percent.

While timber size and quality has decreased, the need for softwoods and the larger and better-quality hardwoods has increased. The spectacular rise in pulpwood production has brought about a big increase in the use of softwoods, and the substantial increase in hardwood lumber and veneer bolt production has increased the demand for high-quality hardwoods. At the same time, the significant drop in use of wood for fuel has reduced the opportunities to utilize the mounting volume of poor-quality timber.

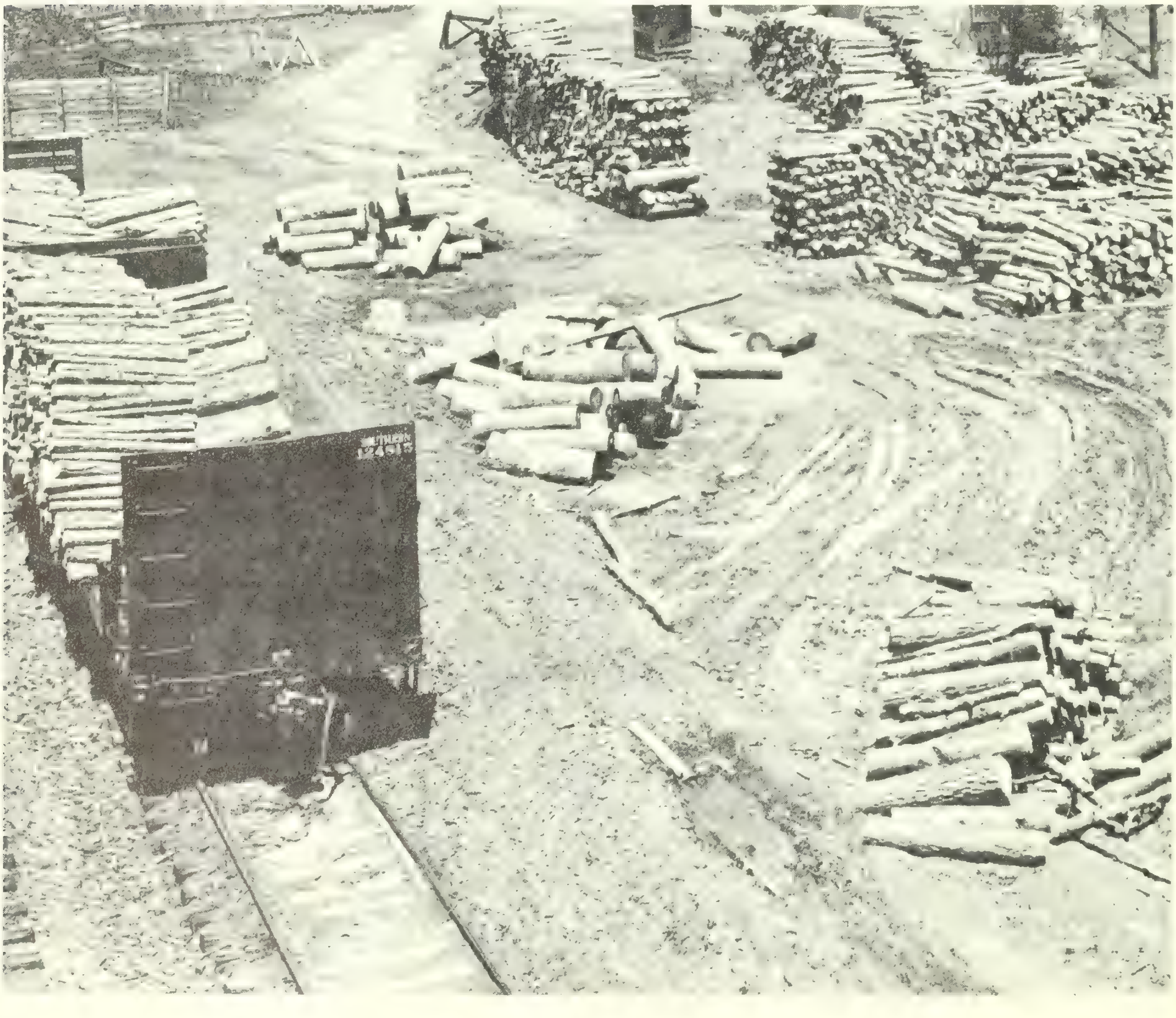
In the light of past trends, the outlook for industries dependent upon large, high-quality timber is bleak. If past trends continue, and this appears quite likely, further decreases in size and quality of timber may be expected. Current and prospective growth will not replace the current cut of large-size timber.

For industries that are able to shift their use to smaller and lower-quality timber, the outlook is much brighter. The supply and growth of both small softwoods and hardwoods is increasing rapidly.

Because of forest land ownership, however, this increase in small timber has added very little to the supply readily available to new industries. A large part of this surplus growth is on land owned by forest industries, where an attempt is being made to build up the growing stock and the productivity of the land. On forest land owned by farmers and others not connected with forest industries, overcutting and reduction in productivity continues.

The large amount of unused timber-growing capacity, especially on land not owned by forest industries, offers numerous opportunities to make additional supplies of timber available for new industries and the expansion of existing industries. Productivity can be substantially increased on at least half of the State's 12 million acres of forest land. Over five million acres, including unproductive forest land and idle and abandoned cropland, are potentially available for planting to pine. Productivity on an additional 3 million acres of medium to well stocked forest land can be increased by releasing the desirable trees from the competition of undesirable culls and shrubs.

How much and what kind of timber will be available to forest industries in South Carolina depends very largely upon action taken by farmers and other miscellaneous private owners not connected with forest industries to increase productivity of the forest land they own. These more than 100,000 individual owners with forest holdings averaging less than 100 acres own 77 percent of the total forest area in the State and supply 80 percent of the current softwood cut. Also, four-fifths of the land that would profit from treatment is in this type of ownership.



CONTENTS

Page

Trends in timber cut - 1

Softwood cut increasing - - - - - - - - - - - - - - - - - 1
Heavier cut from large timber - - - - - - - - - - - - - 1
More timber cut for pulpwood- - - - - - - - - - - - - - 1
Less timber cut for fuel- - - - - - - - - - - - - - - - - 2
More complete use of timber cut - - - - - - - - - - - - 3
Little usable softwood left in woods - - - - - - - - - - 3
Some increase in use of plant residues possible - - - 4

Trends in the timber supply- - - - - - - - - - - - - - - - - 7

Decrease in timber size and quality - - - - - - - - - 7
Severe overcutting in Southern Coastal Plain - - - - 8
Softwood growth increases - - - - - - - - - - - - - - - 8
Decrease in hardwood growth - - - - - - - - - - - - - 9

The timber supply outlook- - - - - - - - - - - - - - - - - - 13

On basis of past trends - - - - - - - - - - - - - - - - - 13
Prospective changes in timber cut - - - - - - - - - - - 13
Prospective changes in timber growth - - - - - - - - - 14
Mortality and its effect on outlook - - - - - - - - - - - 15

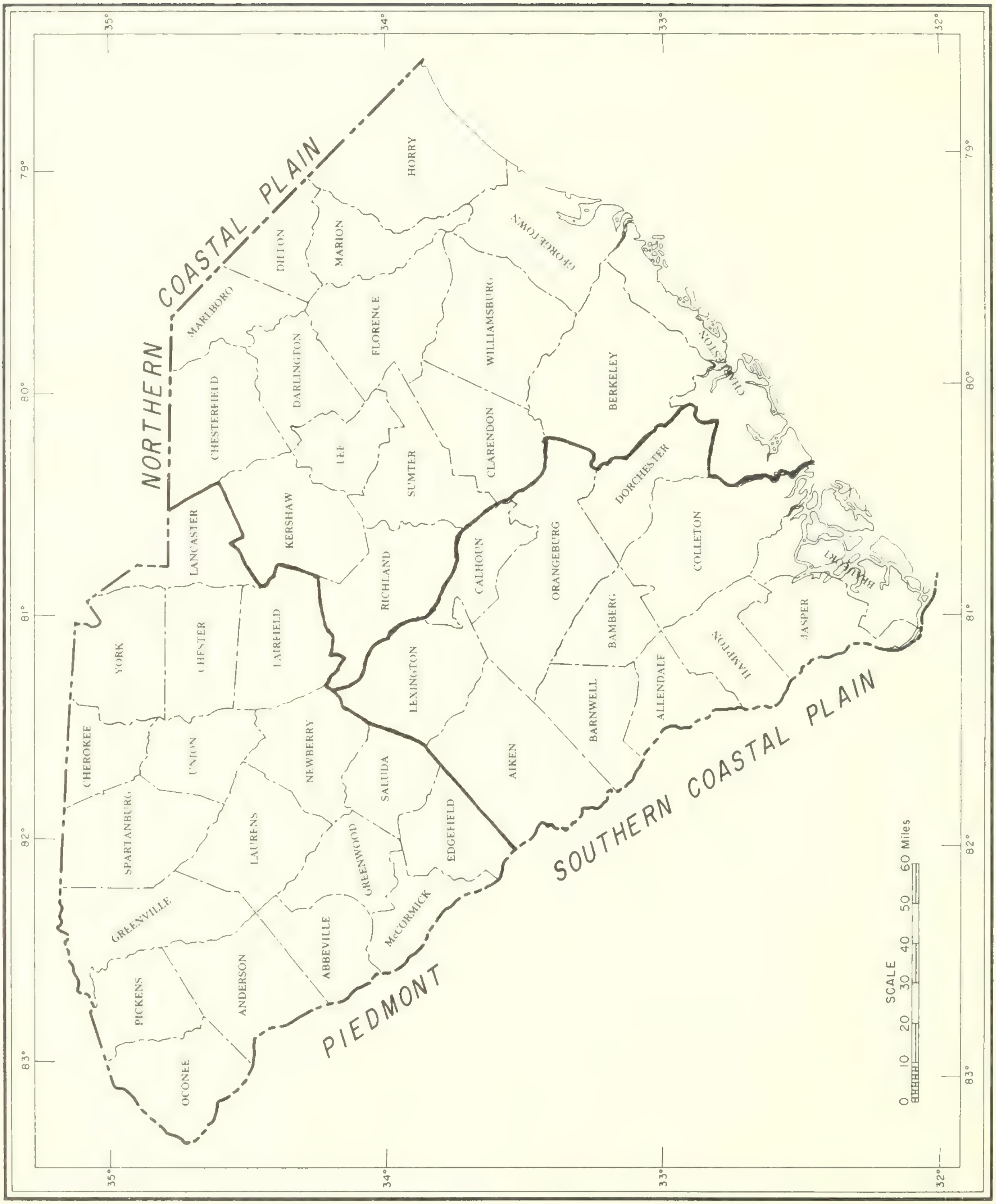
Many ways to improve timber supply outlook - - - - - - 21

Opportunities to improve current stands - - - - - - - 21
Opportunities to establish new stands- - - - - - - - - 22

Owners of small tracts control future trends- - - - - - - 29

Appendix - 34

Accuracy of forest survey estimates - - - - - - - - - 34
How the forest inventory is made - - - - - - - - - - - 36
Definition of terms - 36
Detailed tables - 39


NORTHERN COASTAL PLAIN
SOUTHERN COASTAL PLAIN
PIEDMONT
HORRY
GEORGETOWN
DILLON
MARION
MARLBORO
FLORENCE
WILLIAMSBURG
CHARLESTON
DARLINGTON
BERKELEY
CHESTERFIELD
LEE
SUMTER
CLARENDON
DORCHESTER
KERSHAW
LANCASTER
CALHOUN
ORANGEBURG
COLLETON
BEAUFORT
RICHLAND
FAIRFIELD
CHESTER
YORK
BAMBERG
HAMPTON
JASPER
LEXINGTON
ALLENDALE
BARNWELL
CHEROKEE
UNION
NEWBERRY
SALUDA
AIKEN
SPARTANBURG
LAURENS
GREENWOOD
EDGEFIELD
GREENVILLE
ABBEVILLE
McCORMICK
PICKENS
ANDERSON
OCONEE
35°
34°
33°
32°
79°
80°
81°
82°
83°
SCALE
0
10
20
30
40
50
60 Miles

SOUTH CAROLINA'S TIMBER

by

Robert W. Larson

In June of 1958, the third survey of South Carolina's timber resources was completed. The first survey was finished in 1936 and the second in 1947.

Comparison between the recent and earlier surveys reveals important changes and trends in the State's timber supply. Some have been desirable and reflect substantial improvement in forest practices during the 22-year interval. But many of the changes taking place are not desirable. While the need for the larger and better-quality timber has been increasing, this kind of timber has been decreasing.

TRENDS IN TIMBER CUT

Softwood Cut Increasing

The 22-year trend shows that forest industries were using, on the average, 13 percent more softwood timber in 1957 than in 1936 (fig. 1). In contrast to softwoods, the trend line in hardwood timber cut shows a 17-percent decline. Based on this line, the proportion of the cut coming from softwoods rose from 62 percent in 1936 to 69 percent in 1957.

Heavier Cut From Large Timber

Timber large enough and of good enough quality for saw logs continues to be South Carolina's most important timber resource (table A). The current trend level of softwood lumber production is up 11 percent and the trend of hardwood lumber production is up 19 percent since 1936 (fig. 1). Saw logs make up a slightly smaller proportion of the total softwood timber cut now than in 1936, but the proportion of the hardwood cut going to sawmills has increased.

The increase in use of hardwood timber for veneer has also heightened the need for large, high-quality timber. In 1957, timber cut for veneer bolts made up 26 percent of the total volume of hardwood timber cut, compared to only 14 percent in the late thirties. The volume of timber cut for softwood veneer has declined, but the amount of softwood timber cut for this purpose has never been large.

More Timber Cut for Pulpwood

The increase in the use of softwoods reflects mainly the sharp upward trend in the use of yellow-pine pulpwood during the past 20 years. Pine pulpwood production has jumped from 364,400 cords in 1937, when the first large pulpmill in South Carolina began operating, to 1,342,100 cords in 1959 (table B). Pulpwood in 1957 accounted for 41 percent of the total softwood cut.

While hardwoods are used more and more for pulpwood, they are still not nearly as important a source of pulpwood as softwoods. By 1959, hardwoods climbed to 22 percent of the total pulpwood cut.

Less Timber Cut for Fuel

While the demand for high-quality timber has gone up, opportunities to utilize the smaller, lower-grade timber, especially the low-quality hardwoods, have declined. In 1936, fuelwood use, both hardwood and softwood, ranked second only to saw logs, but wood as a fuel has declined rapidly during the past 20 years. Just during the period between 1940 and 1950, the number of dwellings in South Carolina using wood for heating and cooking dropped 26 percent. Wood for curing tobacco, formerly an important use, diminished rapidly as oil replaced wood.

For softwoods, this decline in the use of wood for fuel has been more than offset by the increase in the use of pine for pulpwood. But for hardwoods, the increased cut for other products did not offset the decline in use of fuelwood. Thus, the drop in use of hardwoods for all products reflects almost entirely the dwindling use of hardwoods for fuel.

As a result of these shifts in timber use, the need for the kind of timber most in demand in 1936 — all sizes of softwoods and the larger hardwoods — is even greater now than 22 years ago. At the same time, with the decline in use of wood for fuel, the opportunity to use the mounting surplus of small, low-quality hardwoods is also declining.

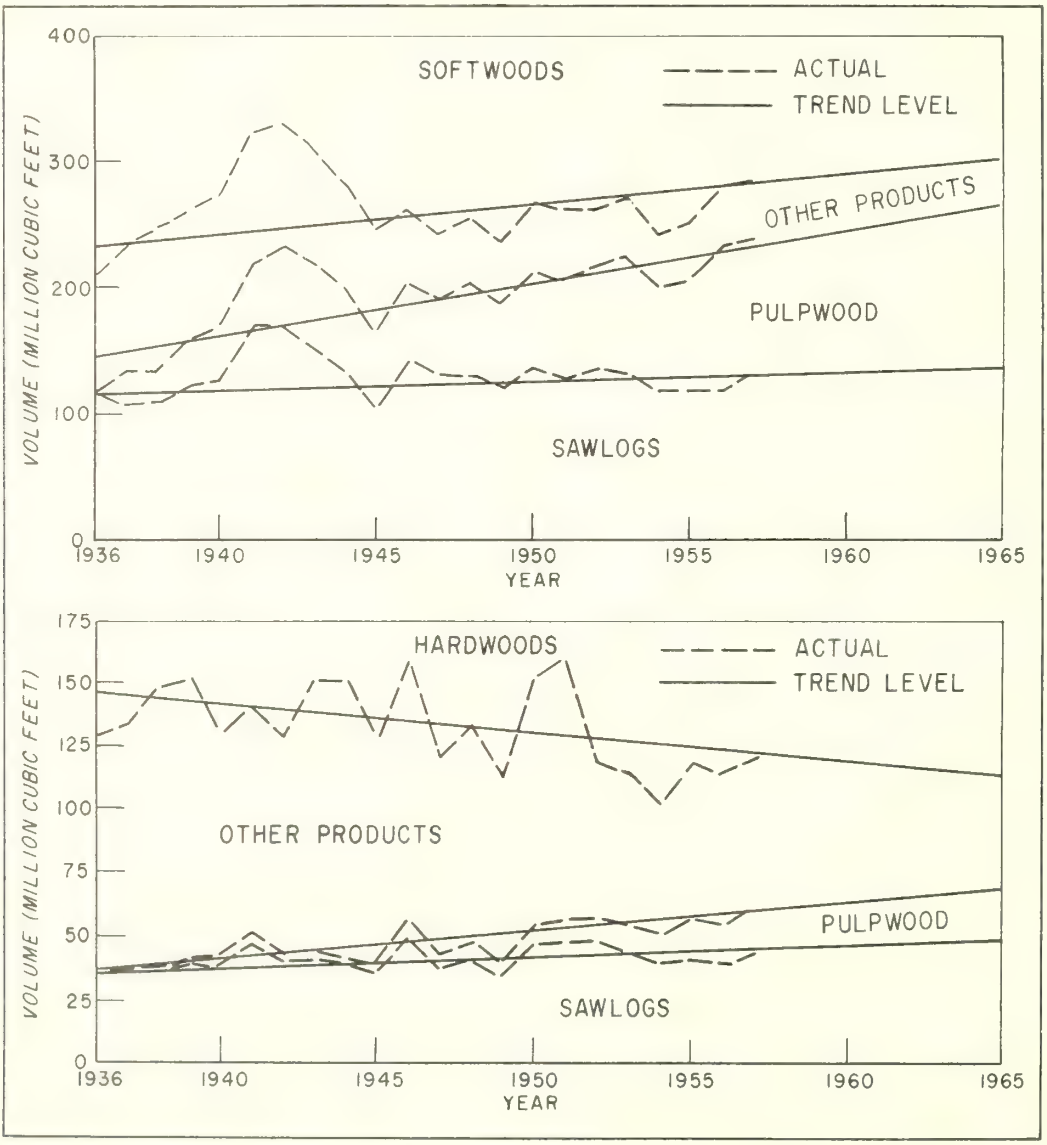


Figure 1.--Forest industries are using more softwoods, mainly because of the greater use for pulpwood. While the use of hardwoods for all products is decreasing, use of hardwoods for both saw logs and pulpwood is increasing.

Table A. --Estimated lumber production in South Carolina, 1936 to 1956 1/
(In million board feet)

Year	Softwoods	Hardwoods	Total
1936	610.2	169.8	780.0
1937	572.6	167.4	740.0
1938	577.1	182.9	760.0
1939	643.5	200.5	844.0
1940	682.3	190.2	872.5
1941	879.9	231.0	1,110.9
1942	886.3	196.9	1,083.2
1943	800.3	200.9	1,001.2
1944	708.0	194.1	902.1
1945	550.6	176.1	726.7
1946	748.5	245.0	993.5
1947	685.7	185.4	871.1
1948	--	--	--
1949	636.7	167.4	804.1
1950	719.8	231.6	951.4
1951	678.0	234.8	912.8
1952	722.0	236.0	958.0
1953	705.0	216.0	921.0
1954	626.0	190.9	816.9
1955	621.0	201.0	822.0
1956	628.0	199.0	827.0

1/ Source: U. S. Bureau of the Census.

Table B. --Round pulpwood production in South Carolina, 1936 to 1958
(In thousand cords)

Year	Pine	Hardwood	Total
1936	35.8	12.8	48.6
1937	364.4	29.3	393.7
1938	362.7	21.6	384.3
1939	533.6	17.0	550.6
1940	602.8	67.5	670.3
1941	744.0	55.5	799.5
1942	863.0	44.2	907.2
1943	954.0	32.6	986.6
1944	1,010.0	43.5	1,053.5
1945	823.8	53.7	877.5
1946	909.2	112.8	1,022.0
1947	862.6	85.7	948.3
1948	1,000.1	108.4	1,108.5
1949	913.5	98.7	1,012.2
1950	1,068.6	113.8	1,182.4
1951	1,105.2	145.8	1,251.0
1952	1,132.5	143.2	1,275.7
1953	1,273.4	172.8	1,446.2
1954	1,160.5	170.4	1,330.9
1955	1,268.7	244.6	1,513.3
1956	1,582.9	223.7	1,806.6
1957	1,384.7	270.3	1,655.0
1958	1,346.3	246.4	1,592.7
1959	1,342.1	367.8	1,709.9

More Complete Use of Timber Cut

In recent years, substantial progress has been made toward more complete utilization of the timber cut. In 1957, 45 percent of the total volume of wood left over from the manufacture of primary forest products was used (fig. 2), mainly for fuel and fiber. While the volume of unused logging and plant residue is substantial (102 million cubic feet), opportunities to add to the timber in short supply by using more of this material are quite limited. Over 40 percent of the logging and plant residue comes from hardwood timber. More than half of this consists of hardwood tops left in the woods following saw-log and veneer-bolt operations. The remainder is plant byproducts consisting mainly of slabs, edgings, shavings, and sawdust produced during the manufacture of hardwood lumber.

This leftover material does not provide a substitute for pine or timber cut from large sawtimber trees. Veneer cores produced by the hardwood veneer industry represent a somewhat higher grade of plant residue, but the volume produced is small, and for the most part it is already being used.

Currently, 42 percent of the byproduct from hardwood plants is being used, mostly for fuelwood. A small amount, 31,297 cords, was used for pulpwood in 1959. This accounted for about 8 percent of the total production of hardwood pulpwood.

Little Usable Softwood Left in Woods

Softwoods, being in greater demand, are utilized much more closely than hardwoods and thus offer limited opportunities for more complete utilization. Very little merchantable softwood timber is left in the woods following logging. Sawtimber trees usually are utilized to a small top diameter, frequently well above the merchantable top recognized by the Forest Survey. Also, a large share of the topwood not utilized for saw logs becomes pulpwood, either during combined saw log-pulpwood operations or during a followup pulpwood operation. In 1957, only about 8 percent (23 million cubic feet) of the softwood timber cut qualifying as growing stock was left in the woods; this is in contrast to 18 percent of the hardwood timber cut. Most of this material left in the woods consists of exceedingly limby tops too widely scattered and too low in quality to justify utilization — especially in view of the currently good supply of small standing roundwood.

The use of softwoods, large and small, and the use of large, high-quality hardwoods has increased during the past 22 years.

Some Increase in Use of Plant Residues Possible

The prospects for utilizing plant residue from softwood timber are somewhat better. But, like logging residue, the usable amount of softwood residue produced is comparatively small, and almost half of what is produced is already being used.

In 1957, the manufacture of softwood timber produced 66 million cubic feet of plant residues (24 percent of the total cut). Of this volume, 35 million cubic feet, more than half, is fine material — sawdust and shavings, with little potential use except for fuel. Fourteen million cubic feet are now being used, mainly for fuel.

Of the remaining 31 million cubic feet of coarse material, mainly slabs and edgings, 17 million cubic feet is already being used for fuel and pulpwood. Use of slabs and edgings for pulpwood is sharply upward; much of this material formerly used for fuel is now being chipped. In 1957, pulpwood chips equivalent to 76,700 cords of roundwood were produced from slabs and edgings. In 1959, the volume of chips jumped to 191,794 cords — 12.5 percent of total pine pulpwood production, almost half the coarse residue available from plants that year.

Opportunities to utilize the remaining are limited by the problem of collecting the slabs and edgings from hundreds of small sawmills scattered throughout the countryside. Most of these mills are too small to justify the cost of installing chippers or debarkers.

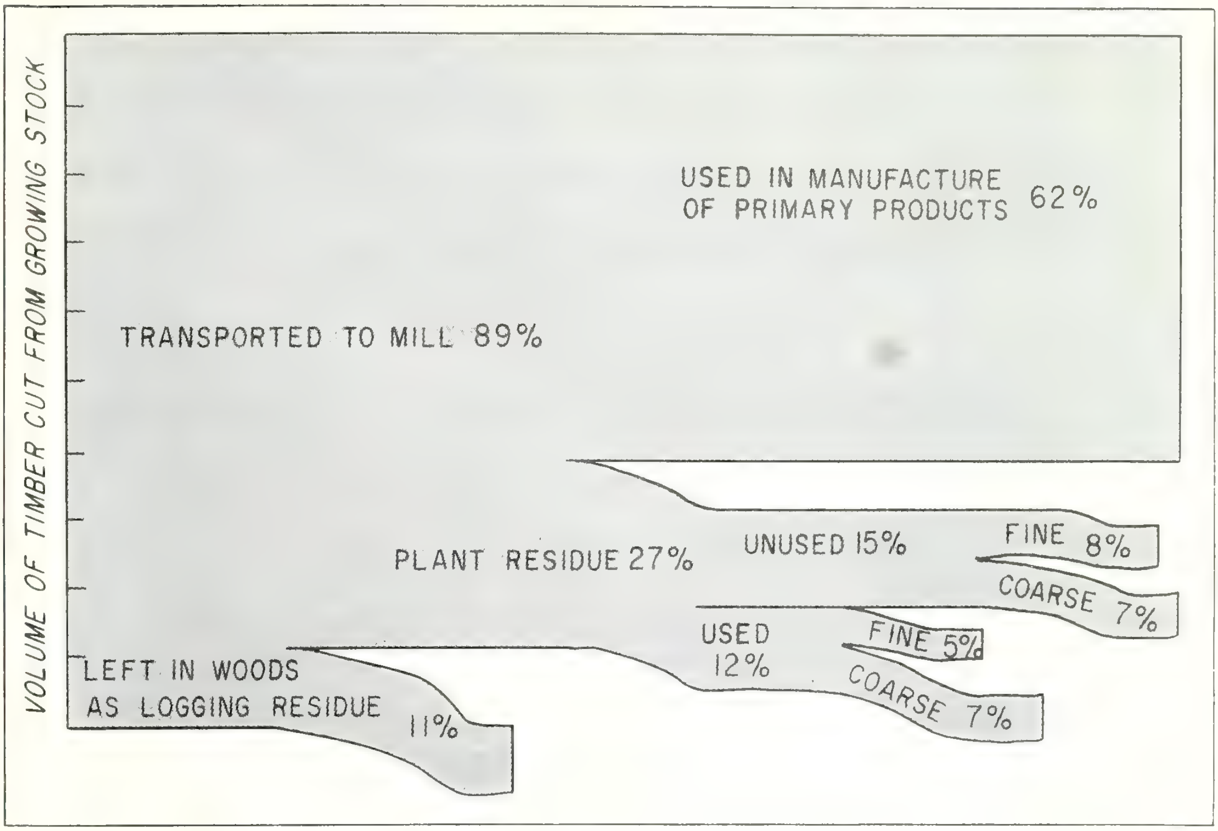


Figure 2.--Almost half of the plant residue produced is now being used. Much of the unused material has little commercial value at the present time or, at best, provides a substitute only for timber already in good supply.

The use of plant residue is complicated by the problem of collecting this material from hundreds of small sawmills scattered throughout the countryside.

TRENDS IN THE TIMBER SUPPLY

Decrease in Timber Size and Quality

During the 22 years between the first and third Survey the total volume of timber in South Carolina has increased, but a larger share of the volume is in smaller and poorer quality trees. The total net volume in hardwood trees increased 16 percent, but the growth of softwood timber barely replaced the cut and mortality (table C). The volume of softwood growing stock, timber now or prospectively suitable for saw logs, dropped 6 percent, and the volume of large sawtimber, trees 15.0 inches and larger, dropped 30 percent.

Hardwood timber has also decreased in size and quality. In contrast to the 16-percent increase in total inventory volume, hardwood timber good enough to make saw logs now or prospectively increased only 8 percent and the volume of large sawtimber dropped 16 percent.

Changes in timber volume during the past 11 years indicate a speed-up in this shift to smaller and lower quality timber. Reduction in the volume of large sawtimber, both softwoods and hardwoods, was more severe between 1947 and 1958 than between 1936 and 1947. Moreover, this decrease in the availability of large sawtimber coupled with the increased demand for softwood timber intensified the cutting on small sawtimber. As a result, the volume of small softwood sawtimber cut exceeded growth during the past 11-year period. This is in distinct contrast to the surplus of growth over cut during the preceding 11-year period.

The growth and cut relationship in 1957, though much less indicative of the long-term trend than net change in volume between Surveys, provided little or no basis for anticipating an early reversal in this long-term trend towards smaller and lower quality timber. While growth was sufficient to replace the cut of poletimber and small sawtimber, both softwood and hardwood large sawtimber were still being overcut (table D).

Table C. --Percent change in timber volume between 1936 and 1958, by type of timber and species group

Type of timber	Species group	1936-1947	1947-1958	1936-1958
Large sawtimber	Softwoods	-15	-18	-30
	Hardwoods	- 6	-11	-16
Small sawtimber	Softwoods	+ 7	-12	- 6
	Hardwoods	+19	- 4	+14
Growing stock	Softwoods	+ 3	- 8	- 6
	Hardwoods	+10	- 1	+ 8
All timber	Softwoods	+ 4	- 4	- 1
	Hardwoods	+ 8	+ 8	+16

Table D. --Net volume of timber growth and cut, by type of timber and species group, 1957

Type of timber	Timber growth and cut	Softwoods	Hardwoods	Total
		- - - - - - - -	Million cubic feet	- - - - - - - -
Large sawtimber	Growth	67.5	58.7	126.2
	Cut	87.2	69.9	157.1
	Net change	-19.7	-11.2	-30.9
Small sawtimber	Growth	128.2	33.8	162.0
	Cut	129.1	28.9	158.0
	Net change	-0.9	+4.9	+4.0
Growing stock	Growth	280.9	123.2	404.1
	Cut	277.4	115.3	392.7
	Net change	+3.5	+7.9	+11.4
All timber	Growth	296.5	140.8	437.3
	Cut	288.5	121.5	410.0
	Net change	+8.0	+19.3	+27.3

Severe Overcutting in Southern Coastal Plain

State-wide comparisons conceal significant differences in timber supply trends in various parts of the State. During the past 22 years, cutting in excess of growth has been especially severe in the Southern Coastal Plain. Here softwood inventory volume dropped 24 percent, growing stock 29 percent, and large softwood sawtimber 49 percent (table E). Somewhat less intensive cutting in relation to growth in recent years has resulted in some leveling off of this downward trend. The reduction in volume has not been so great during the past 11 years as between 1936 and 1947.

In contrast to the Southern Coastal Plain, timber cutting in relation to growth has been much less intensive in the Piedmont. Here total softwood volume increased 27 percent, and cutting in excess of growth reduced the volume of large sawtimber by only 6 percent.

In the Piedmont, hardwood volume increased by nearly two-thirds and even the growth of large hardwood sawtimber was sufficient to replace the cut.

Timber trends in the Northern Coastal Plain follow closely the trends for the entire State.

Softwood Growth Increases

Changes in timber volume have markedly affected the amount and kind of timber that can be cut without exceeding growth. Since inventory volume has dropped, current growth will sustain a smaller cut from large, high-quality timber.

But growth will replace a substantially larger cut from smaller and lower quality softwood timber. Between 1936 and 1957, softwood growth increased 38 percent. Part of this increase can be attributed to faster diameter growth, but most of it reflects the rapid buildup in number of small trees. In the 22-year period, the number of trees in the 2-inch d. b. h. class jumped from 663 million in 1936 to 1,326 million in 1958, an annual increase of over 30 million trees. This growing backlog of saplings has the effect of increasing the contribution of small trees to total growth (ingrowth). The number of softwood trees reaching 5.0 inches annually has increased from 31 million in 1936 to 54 million in 1957.

The increase in both average growth rate and number of small trees reflects improvement in fire protection. In the late thirties and early forties, uncontrolled fire swept through about a million acres of forest land annually, killing countless pine seedlings and saplings and reducing the growth of the larger trees that survived. Area burned dropped sharply after 1945, when fire protection was extended to the entire State. During the 3-year period, 1956-1958, the annual burn averaged only 51,000 acres.

The reversion of abandoned cropland to forest also contributed substantially to the increase in small pine timber. Between 1936 and 1958, the reversion of cropland to forest, usually to pine, exceeded land clearing by 1.3 million acres.

The low initial density of these old-field pine stands and the heavy and frequent cutting of the stands may have contributed also to the increase in diameter growth.

Table E. --Percent change in timber volume between 1936 and 1958, by type of timber, species group, and Survey Unit

Type of timber	Species group	State	Southern Coastal Plain	Northern Coastal Plain	Piedmont
Large sawtimber	Softwoods	-30	-49	-24	-6
	Hardwoods	-16	-25	-18	+7
Small sawtimber	Softwoods	-6	-19	-7	+10
	Hardwoods	+14	+5	+3	+60
Growing stock	Softwoods	-6	-29	-6	+21
	Hardwoods	+8	-4	0	+50
All timber	Softwoods	-1	-24	-1	+27
	Hardwoods	+16	-3	+11	+64

Decrease in Hardwood Growth

In contrast to softwoods, hardwood trees are growing slower now than in 1936. As a result, net volume of growth has dropped slightly, the increase in volume having failed to compensate for the decline in diameter growth.

This reduction in diameter growth reflects the increase in hardwoods on upland sites not suited to growing hardwoods, and the increasing density of hardwood stands, especially the younger stands, which receive little or no cutting. Increase in density not only intensifies the competition among the trees in the main canopy, but increases the number of overtopped trees in the understory. These overtopped hardwoods, unlike pine, which die soon after they are crowded out of the main canopy, survive and grow very slowly for many years. Thus, if the less thrifty trees are not removed, the natural development of hardwood stands will result in a gradual decrease in the average diameter growth rate.

This drop in hardwood growth has not seriously affected the timber supply outlook. The reduction was moderate and confined almost entirely to small timber. In 1957, net growth of this kind of timber was still sufficient to replace the cut and mortality.

Large trees for high-quality lumber and construction timber are becoming more difficult to find.

Since 1936, the supply of small pine timber has increased substantially.

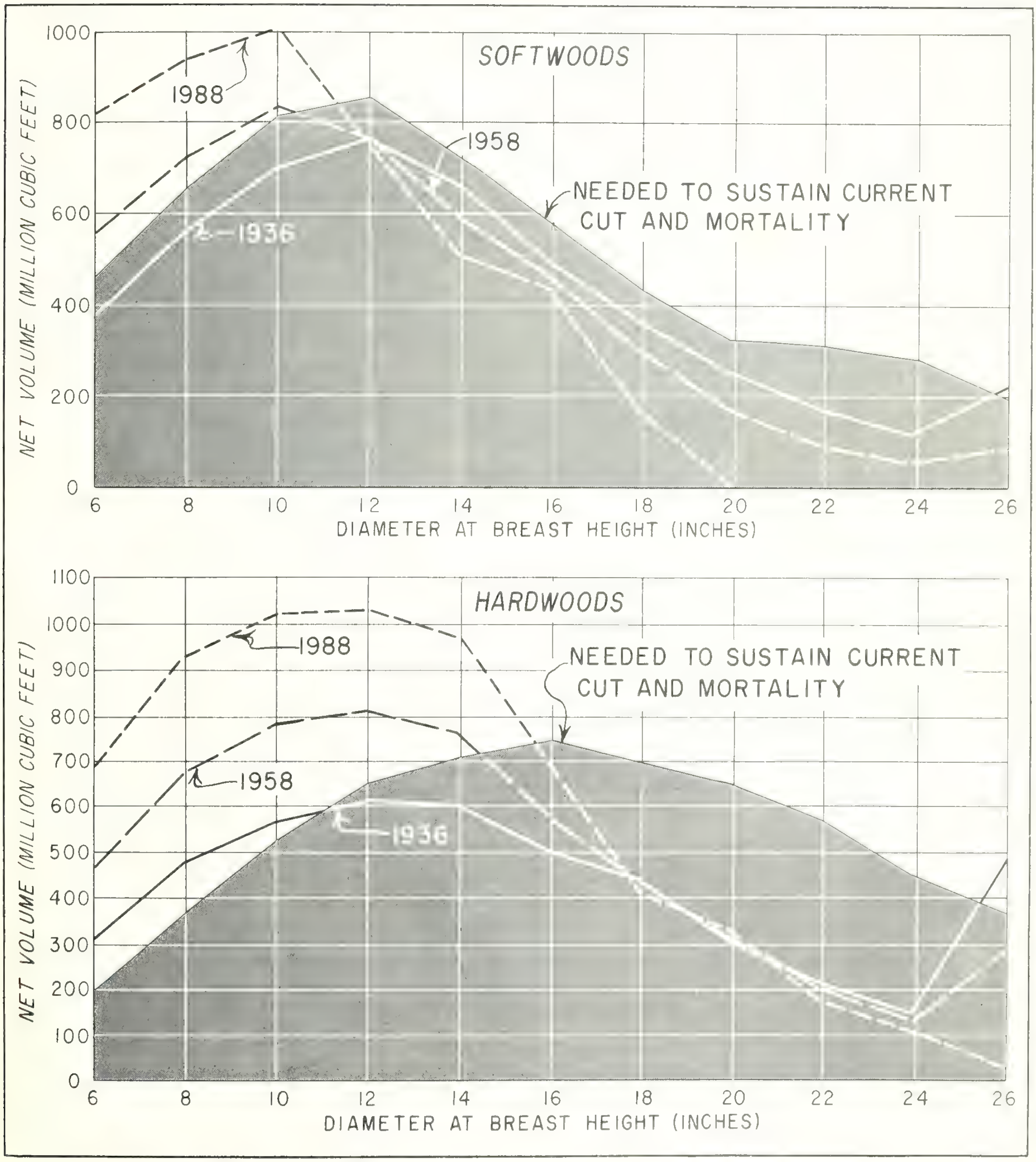


Figure 3.--Total volume of timber is increasing but the average size is decreasing. Neither the current nor the projected stand will provide the growth needed to replace current cut and mortality.

On Basis of Past Trends

A continuation of past trends in timber volume has far-reaching implications to forest industries, especially to industries dependent upon large timber. Prospective growth based on a continuation of the past average annual change in timber volume by diameter class would sustain a substantial increase in the total cut, but it would not sustain the current size-class distribution of even the present cut. Total softwood volume, of course, would remain about the same, but even assuming no change in current diameter growth and mortality rates, a continuation of the buildup in small timber would result in increasing total softwood growth from 296 million cubic feet in 1958 to 359 million cubic feet in 1988 — an increase of 21 percent. This is an increase of 32,000 cords a year. If past trends continue, this increase in growth will permit increasing the cut at a substantially faster rate than it has increased over the past 22 years.

While total cut could be increased, much less growth would be available to replace the cut of large timber. The volume of softwood timber in trees 19.0 inches and larger would not sustain the average annual change for 30 years; the volume of this size timber, even with the gradual reduction in annual cut implied by a constant annual change, would be depleted before 1988 (fig. 3). The volume of timber 15.0 inches and larger would be greatly reduced. This size timber would contribute only 10 percent of the total growth in 30 years, compared to 24 percent in 1958 and 35 percent in 1936. By comparison, in 1957 a third of the total softwood cut came from large sawtimber.

A continuation of past trends in hardwood volume would result in an increase in both inventory volume and growth. But like softwoods, growth available to replace the cut of large timber would be greatly reduced. The growth of timber 15.0 inches and larger would increase, but even by 1988 growth would still not be sufficient to replace even the current cut, especially in view of the trend in timber quality.

The present timber supply will not sustain the size class distribution of the current cut; moreover, the possibility of making adjustments in the cut that would eventually permit timber volume to build up enough to sustain the current cut appears highly remote. Even if self-imposed regulation of the cut by hundreds of forest industries were feasible, the drastic adjustments required would be highly disruptive to the State's forest economy. For softwoods, the total cut would have to be reduced initially by 9 percent to permit the required buildup to take place in 30 years. The cut of timber 15.0 inches and larger would have to be reduced by more than 50 percent.

Adjustments in the hardwood cut would have to be even greater. At first, very little hardwood timber 15.0 inches and larger could be cut. And for hardwood timber 17.0 inches and larger, current net annual growth is less than the average annual increase needed to build up the inventory volume to the required level in 30 years.

Clearly, then, adjustments in the cut offer little hope of preventing forest industries from being forced to rely more and more on small, low-grade timber for their raw material.

Prospective Changes in Timber Cut

Although it is highly unlikely that past trends will continue unchanged, these trends and their long-term implications provide a valuable guide to the future. They reveal opportunities to reinforce desirable trends and reverse or minimize the undesirable. Many forces now at work will influence future trends in both timber cut and growth. A projection of the past 22-year trend in softwood timber cut in South Carolina to 1988 is only 10 percent greater than the present cut. If the timber is available, the chances are good that softwood timber cut will increase much faster than this. The short-run outlook is for a substantial increase in timber cut for pulpwood. Recent and planned expansion of pulping facilities in and near South Carolina could add more than a million cords to the annual cut of pine. The annual increase in growth will replace an annual increase in cut of about 32,000 cords. Serious overcutting and reduction in growth could consequently occur unless this increase in cut is spread out over a long period.

Continued rise in demand for pine is also highly probable in the light of the long-term outlook. A recent estimate by the U. S.

Bureau of Census indicates that the nation's population will increase 26 percent between 1959 and 1975. Because of the rise in standard of living, the need for raw materials has risen even faster than the increase in population. With the cutting out of the old-growth timber in the West, moreover, the U. S. as a whole will look more and more to states like South Carolina, with its large area of forest land, rapid growth rates, and nearby markets, to supply an increasingly large share of the timber needs. Thus, the cut of softwood timber may be expected to rise at least as fast as the growth, making the prospect of a growth surplus and a buildup in inventory volume highly unlikely in the foreseeable future.

Hardwood timber cut has dropped since 1936. In the light of the upward trend in hardwoods used for lumber, pulpwood, and veneer, the chances are good that this downward trend will be reversed. The hardwood cut will probably increase but perhaps not so fast as the cut of pine.

Prospective Changes in Timber Growth

Between 1936 and 1957, total softwood growth increased 38 percent, mainly in the small trees. Continued increase in growth depends upon at least maintaining the present inventory volume, continued increase in diameter growth, and continued increase in number of small trees. Although diameter growth increased 10 percent between 1936 and 1957, there is little basis for anticipating a significant change in diameter growth in the future; increasing density of the stands may be expected to depress diameter growth, but this probably will be largely offset by more frequent thinnings and stand improvement cuts.

Trends in growth are very closely associated with the number of seedlings becoming established each year. Since 1936, the establishment of new pine seedlings or regeneration has more than kept pace with the increase in growth. The number of 2-inch softwoods increased at an annual rate of 30,120,000 trees over the 22-year period between surveys.

Continuation of this upward trend in natural pine regeneration is not likely, since conditions favorable to the natural regeneration of pine are not as prevalent now as they were in the late thirties and early forties. Uncontrolled fire, which annually killed millions of seedlings, also temporarily created conditions favorable to natural pine regeneration. With the improvements in fire protection, thousands of acres which formerly were kept poorly stocked by repeated fire became stocked with pine. However, areas that did not readily restock with pine reverted to low-quality hardwoods. Also, thousands of acres of pine stands, when cut over, did not come back to pine but reverted to hardwoods. Thus, in spite of the widespread invasion of pine on over a million acres of old cropland, the reversion of pine to hardwood type offset the increase in pine type by a substantial margin. The area of pine and oak-pine type dropped 17 percent, while the area of hardwood type increased 89 percent. In 1936, pine and oak-pine types covered 73 percent of the forest area, compared to 54 percent in 1958 (fig. 4).

Currently, partly because of better fire protection, conditions on very little of the forest land cut over annually favor natural pine regeneration. Because of this tendency for forest land to be taken over by shrubs and hardwoods very soon after cutting, the area of forest land with conditions favoring natural pine regeneration is small; in 1958, only 47,000 acres of recently cut upland sites had both an adequate pine seed source and a favorable seedbed.

The 1.4 million acres of idle or abandoned cropland represent most of the land favorable to the natural regeneration of pine. The trend in this kind of land, however, is down. The area of abandoned farmland about doubled between 1936 and 1947, but dropped 10 percent between 1947 and 1958.

In view of the growing population and the greater need for cropland, pasture, and land for building sites, roads, reservoirs, and rights-of-way, the area of abandoned farmland available for timber production will probably decrease. While the land devoted to urban and other related uses is still small, the area used for these purposes increased 37 percent between 1947 and 1958.

Without action to offset this rising trend in conditions unfavorable to natural pine regeneration, a continuation of the past upward trend in pine growth is unlikely.

Total hardwood growth may be expected to more than keep pace with the total cut, but in the absence of a substantial increase

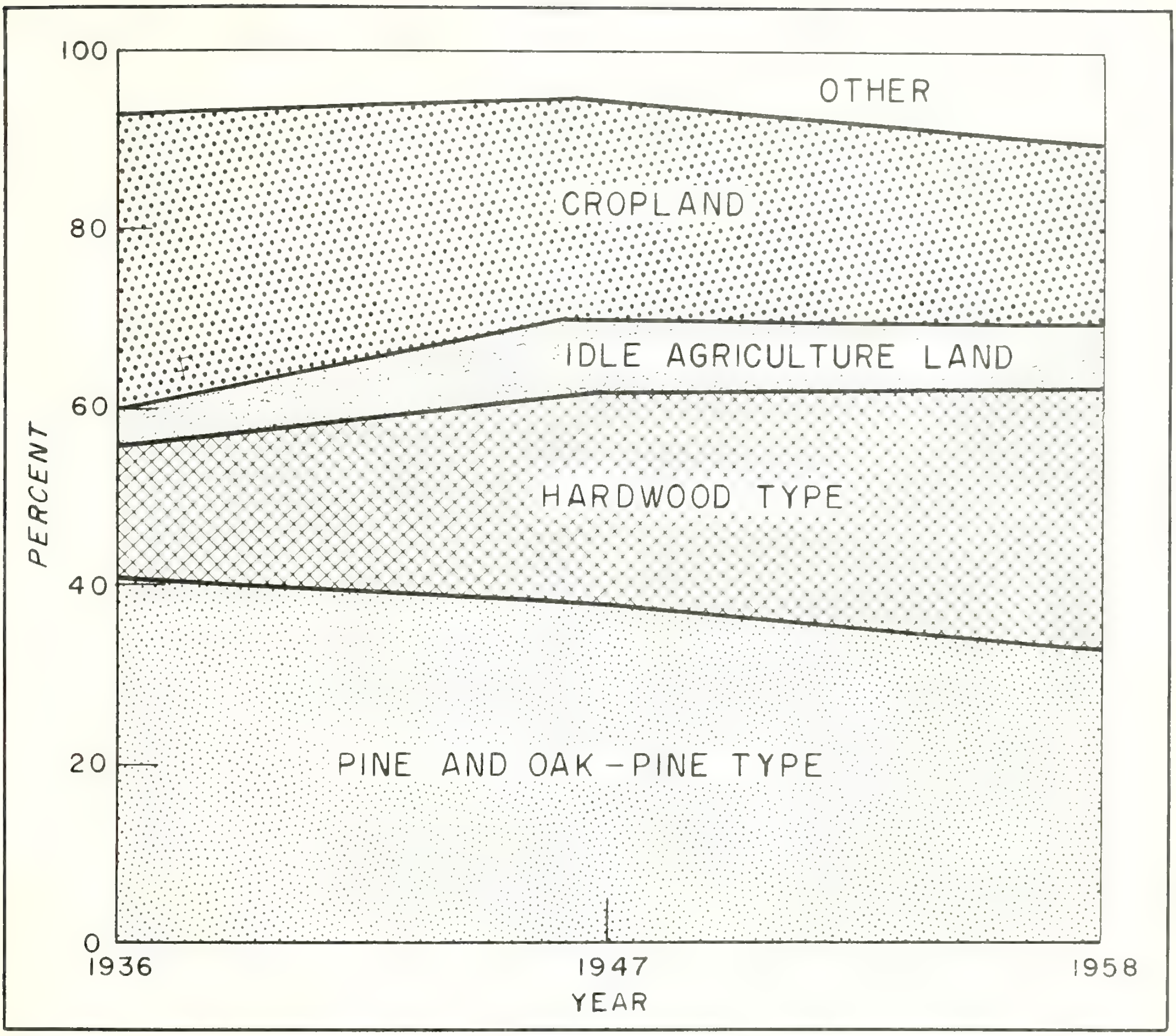


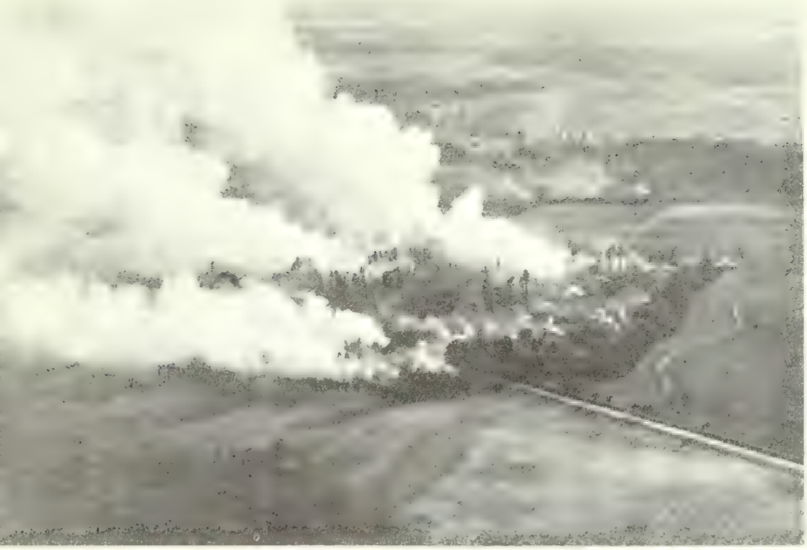
Figure 4.--The invasion of hardwoods into pine stands has more than offset the reversion of idle agricultural land to old field pine.

in stand improvement measures, the quality of hardwood timber will continue to decline.

Mortality and Its Effect on Outlook

The volume in trees that die each year offsets a substantial part of the gross annual growth; in 1957 this mortality reduced gross softwood growth by 26 percent and hardwood growth by 45 percent. A certain amount of mortality is, of course, part of natural development in unmanaged timber stands. As trees increase in size, some must die to make room for growth and development of those that remain. For example, according to stocking standards used by the Forest Survey, only 115 well-spaced 12-inch trees are needed to stock an acre, compared to 400 6-inch trees. Hence, mortality during the time it takes these trees to grow from 6 to 12 inches can remove up to 285 trees without reducing the optimum stocking.

A study of growth and cut in relation to net change in inventory volume over the past 22 years provides no evidence of abnormally high mortality rates in South Carolina as a whole. Volume losses due to mortality averaged 2.2 percent of the inventory volume for softwoods and 2.5 percent for



Uncontrolled fires in the late 30's and early 40's kept thousands of acres of pine land poorly stocked.

With improved fire protection, small pines rapidly filled in the many forest openings created by frequent burning.

hardwoods. A mortality rate as high as 3.7 percent for softwoods, if distributed evenly, would not have reduced the stocking. However, in some areas, notably in the Piedmont, where littleleaf disease is especially prevalent, concentrated losses have virtually eliminated shortleaf sawtimber. Except in shortleaf pine stands, the state-wide mortality rate does not appear to be excessive for the State's predominantly unmanaged pine stands.

The hardwood mortality rate was slightly in excess of the normal rate of 2.2 percent. This probably reflects the effect of overstocking in many hardwood stands, and not a reduction in hardwood stocking.

While the present state-wide mortality rate is not excessive for unmanaged stands, it is high for managed stands. Much of this mortality can be anticipated if trees are utilized in thinnings and improvement cuts before they die, and in fact this premortality salvage of littleleaf trees has minimized losses from the disease. In future, much of the loss from littleleaf can be eliminated by early harvest of shortleaf on sites especially susceptible to the disease, followed by conversion to less susceptible species such as loblolly pine.

The total volume in pine trees that die throughout the State each year amounts to more than a million cords. Much of the dead timber is so widely scattered throughout the stands that very little of it is salvaged in the course of normal harvest operations. The utilization of more of this mortality through salvage of dying or recently killed timber could add several hundred thousand cords to the annual net growth.

The threat of abnormal or catastrophic mortality by such agents as fire, insects, disease and wind is ever present and must be taken into account in evaluating the growth outlook. Vigilance is needed to detect incipient flare-ups so that prompt action can prevent or minimize loss and safeguard investment. The recently discovered prevalence of *Fomes annosus* root rot in many thinned slash pine plantations is an example. Similarly, sign of a buildup in pine bark beetle should be watched and action taken to prevent large-scale tree killing. Also, where timber loss cannot be anticipated or prevented, such as in the case of damage from wind or fire, prompt salvage operations can reduce the impact.

Reseeding of thousands of acres of idle cropland to pine also reinforced the supply of small pine timber.

With the reversal of the upward trend in idle cropland and the increase in low-quality hardwoods, the outlook for natural pine regeneration is not nearly so favorable now as it was 10 years ago.

MANY WAYS TO IMPROVE TIMBER SUPPLY OUTLOOK

In the light of past and prospective trends there appears to be room for some expansion of industries able to use small, low-quality timber, but industries dependent upon large, high-quality timber will find this type of material increasingly hard to locate. Opportunities for expansion will be highly dependent upon maintaining or improving the growth-cut balance, which will mean, on one hand, keeping the annual increase in cut below the annual increase in growth, and, on the other hand, taking advantage of the many opportunities to increase the productivity of forest land.

Forests cover 12 million acres, or 62 percent of the total land area in the State. Practically all this area will grow high-quality timber, but on over half of the commercial forest land timber-growing capacity is being wasted (table F). In 1958, the State had 8.5 million acres of upland sites capable of growing pine. This does not include the 200,000 acres of the best upland sites now growing hardwoods, which can grow either high-quality pine or hardwoods. Practically all of this upland area grew pine at one time or another in the past, but now only 3.0 million acres is well stocked with pine. Another 432,100 acres is medium- to well-stocked with pine, and conditions favor full stocking without treatment in a comparatively short time.

About half of the 3.4 million acres of the sites best suited to growing hardwoods, mainly lowland hardwood sites, is well stocked.

Opportunities to Improve Current Stands

South Carolina has 2.8 million acres of forest land medium- to well-stocked with pine or hardwood growing stock, but the outlook for further improvement in stocking is very poor because of the presence of such unwanted material as shrubs, culls, and low-quality hardwoods.

On 1.3 million acres where pine stocking is between 40 and 70 percent, hardwoods and shrubs control 20 percent or more of the area. These stands have a high potential productivity; average stocking of pine 1.0 inch and larger is 47 percent. But hardwoods 1.0 inch and larger control 34 percent of the area. The desirable hardwood stocking averages only 7 percent; the remaining hardwoods are either culls or species which, as a rule, do not develop into high-quality timber on these upland sites.

Table F. --Commercial forest area by major type of action needed to increase productivity, 1958

Type of action needed	Commercial forest area	
	Thousand acres	Percent
No action needed:		
Pine stands	3,443.8	28.8
Hardwood stands	1,679.3	14.1
Total	5,123.1	42.9
Stand improvement:		
Pine stands	1,293.1	10.9
Hardwood stands	1,518.3	12.7
Total	2,811.4	23.6
Regeneration to pine:		
Without site preparation	458.8	3.8
With site preparation	3,541.6	29.7
Total	4,000.4	33.5
All commercial forest area	11,934.9	100.0

This undesirable timber makes up 2.7 cords out of the total average volume of 10.6 cords per acre (table G). Of the material that should be removed, only 269 board feet per acre qualify as sawtimber.

Currently, landowners will find it difficult to sell very much of this type of material; usually they will have to deaden these unwanted trees.[1] Some idea of the size and character of the stand improvement job is shown by the number and size of undesirable trees:

Size of trees (Inches)	*Undesirable trees per acre* (Number)
11.0 plus	5
3.0 to 11.0	83
1.0 to 3.0	303

---

[1] Lotti, Thomas. Growing loblolly pine in the South Atlantic states. U. S. Dept. Agr. Farmers' Bul. 2097, 33 pp., illus. 1956.

Table G. --Net volume per acre, by size and type of timber, of medium-to-well-stocked pine stands needing stand improvement, 1958

Size of timber (Inches d. b. h.)	Softwoods		Preferred hardwoods		Culls and other hardwoods		Total	
	Cords	Bd. ft.	Cords	Bd. ft.	Cords	Bd. ft.	Cords	Bd. ft.
15.0 +	1.7	757	0.4	169	0.6	130	2.7	1,056
11.0 +	3.7	1,453	.7	251	1.3	269	5.7	1,973
9.0 +	4.9	1,833	.8	251	1.7	269	7.4	2,353
5.0 +	6.8	--	1.1	--	2.7	--	10.6	--

Many hardwood stands even on the best hardwood sites also need stand improvement. On nearly half of the 3.4 million acres of lowland forest area, the area best suited to growing hardwoods, culls control 20 percent or more of the area. Cull timber in these stands averages 3.6 cords per acre, or 27 percent of the total volume. Moreover, the least desirable species contain a large share of the growing stock volume (table H). Thus, in many instances stand productivity would be improved not only by removing the culls, but also by removing some of the poorer-quality trees that barely qualify as growing stock, especially where they are interfering with the development of better-quality trees.

Opportunities to Establish New Stands

An increase in planting and in measures to improve conditions favoring natural regeneration will be needed to offset the generally unfavorable outlook for natural pine regeneration. Until recently, planting played a minor role in forest regeneration. Between 1950 and 1955, the average distribution of 28 million pine seedlings a year accounted for only 10 percent of the number of seedlings that must be established annually to sustain current softwood growth. Since 1955, planting has increased rapidly; for instance, during the 1958-59 season 166 million pine seedlings were set out.

South Carolina has plenty of land on which pine could be established. On 4 million acres of upland sites capable of growing pine, both current and prospective growth of either pine or good-quality hardwoods is very low. Pine stocking is less than 40 percent, seed source is inadequate, and shrubs, culls, and other worthless hardwoods control 20 percent or more of the area (table I).

The 1.4 million acres of idle and abandoned farmland represents still another important potential source of land available to grow pine. Not all of this land may be available for timber production; some may be returned to crops, some may be converted to improved pasture. But in the past, a large share of this land was not put to other uses and was allowed to revert to forest. This area should be planted to assure prompt, full stocking of desirable trees.

Altogether, land potentially available for planting to pine adds up to 5.4 million acres. About a third of this area could be planted without preparation; the remainder requires site preparation.

Table H. --Net volume per acre, by size and type of timber, of lowland hardwood sites with 20 percent or more of the area controlled by culls, 1958

Size of timber (Inches d. b. h.)	Preferred species		Other hardwoods		Culls		Total	
	Cords	Bd. ft.	Cords	Bd. ft.	Cords	Bd. ft.	Cords	Bd. ft.
15.0 +	1.4	618	2.0	814	1.3	--	4.7	1,432
11.0 +	2.7	1,048	3.7	1,322	2.2	--	8.6	2,370
5.0 +	3.9	1,094	5.6	1,322	3.6	--	13.1	2,416

How fast this pine land should be planted depends on future trends in both timber needs and conditions favoring natural pine regeneration. Each year, cutting adds over 200,000 acres to the planting job. In light of mounting demands for wood and probable deterioration in conditions favoring natural pine regeneration, planting should be maintained at a high level until the next Forest Survey, planned in 7 to 10 years. At that time, the need for future planting can be evaluated in accordance with trends.

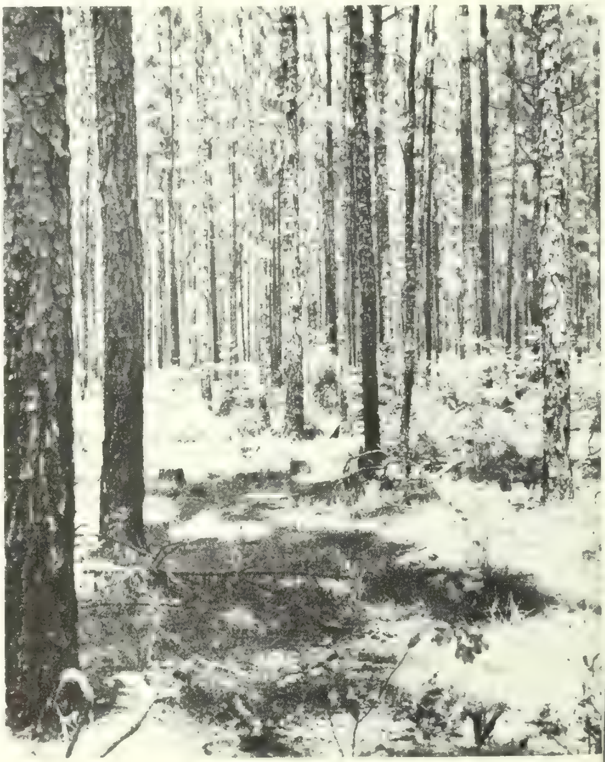
Table I.--Land area available for planting to pine, by type of land, 1958

Type of land	Area
	Thousand acres
Without site preparation:	
Commercial forest area, 1957	420.7
Annual increase due to cutting, 1957	38.1
Idle and abandoned cropland, 1958	1,423.4
Total, 1958	1,882.2
With site preparation:	
Commercial forest area, 1957	3,358.4
Annual increase due to cutting, 1957	183.2
Total, 1958	3,541.6
All types, 1958	5,423.8

Over most of South Carolina, forests dominate the landscape. Available for the production of timber is 12 million acres or 62 percent of the total land area in the state.

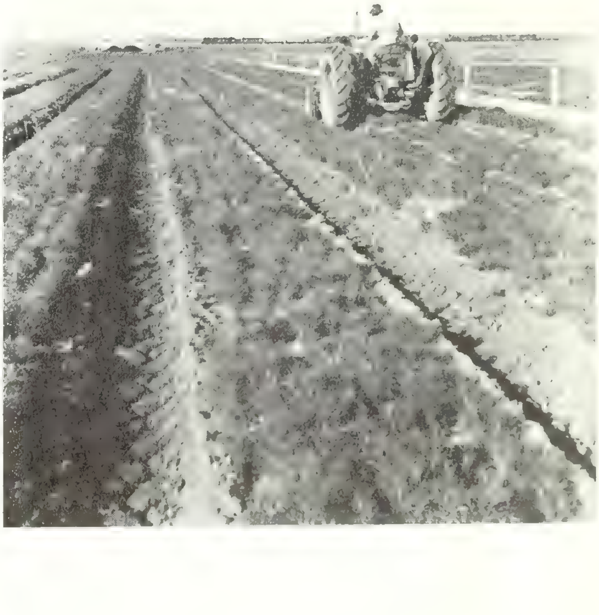
Only 43 percent of the forest land is well stocked--3.4 million acres with pine and 1.7 million acres with hardwoods.

About half a million acres of forest land is unproductive because of sparse stocking. But much more serious is the 50 percent of the State's forest land where low-quality trees and shrubs prevent growth of worthwhile timber.



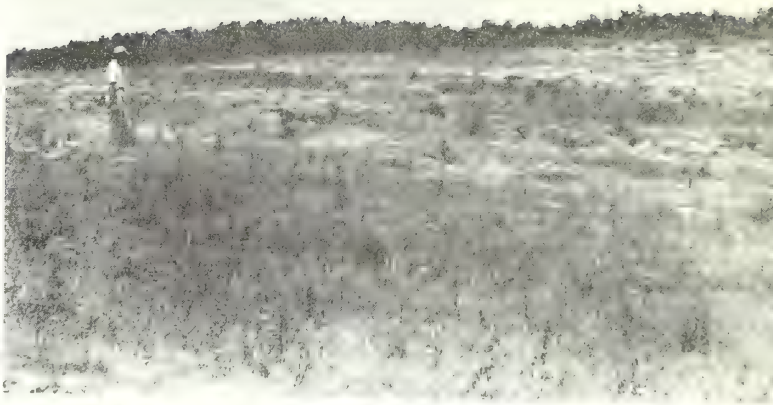
Large numbers of pine seedlings will be needed to restock the areas that do not readily seed in to pine.

Productivity of 2.8 million acres can be improved by removing the low-grade material. But 3.5 million acres has very little potential. Complete removal of the present low-grade material will usually be needed prior to measures to regenerate the stands.



By far the largest share (3.5 million acres) of the land in need of regeneration requires first of all the removal of unwanted vegetation. Planting will usually be required following site preparation.

Prompt planting of abandoned farmland will very often mean the difference between incomplete stocking with low-quality trees and prompt full stocking with high-quality timber.



OWNERS OF SMALL TRACTS CONTROL FUTURE TRENDS

The volume and kind of timber available to forest industries in the future will depend to a very large extent upon the action individual private forest landowners take to increase the productivity of the forest land they own. By far the largest share of the cut now comes and will continue to come from relatively small tracts of timber owned by thousands of individual owners whose interests are not directly connected with forest industries. Over 100,000 farmers own 57 percent of the commercial forest land and 52 percent of the timber volume. Their lands in 1957 supplied forest industry with 58 percent of the softwood timber cut. An additional 20 percent of the forest land is owned by about 12,000 miscellaneous nonfarm owners, including bankers, lawyers, merchants, doctors, and housewives. In 1957, 21 percent of the softwood cut came from these lands. Fourteen percent of the forest land is owned by 732 forest industries; timber cut from these lands contributed 14 percent of the softwood cut in 1957. Publicly-owned forest land (about half of it national forest land) accounts for only 9 percent of the total and in 1957 supplied only 6 percent of the softwood cut (table J). Clearly, South Carolina must look to these thousands of small private landowners for about 80 percent of the softwood cut.

These lands, which must supply the bulk of the future cut, are not so productive as either public lands or land owned by forest industries. The average sawtimber growth on public land is 19 percent higher than the average for all forest land, 23 percent higher than private farm, and 28 percent greater than miscellaneous nonfarm (table K). Average sawtimber growth per acre on industrial forest land is very nearly as high as on public land. In fact, in terms of volume per acre of timber 5.0 inches and larger (growing stock), growth on land owned by forest industries exceeds the average for public land by 14 percent. Growth per acre on public land is only slightly better than the average.

Not only are private farms and miscellaneous nonfarm tracts less productive than public and forest industry lands, but the growth-cut relationship is less favorable. While softwood growth on public and forest industry land exceeds the cut by a substantial margin, softwoods on other forest land are being overcut, especially land owned by farmers, where 1957 cut exceeded growth by 10 percent. Thus, until growth on these lands can be increased and a more favorable growth-cut balance achieved, there is no room for the expansion of industries that must depend primarily on these lands for their timber supply.

The lower productivity of private farm and miscellaneous ownerships can be traced in part at least to poorer stocking on these lands. The average volume per acre of 2,969 board feet per acre on public land is 24 percent above the average for all land and 38 percent above the average for private farms (table L).

Table J. --Commercial forest land, softwood timber growth, and cut, by ownership

Ownership	Forest area, 1958		Net growth, 1957		Timber cut, 1957	
	Thousand acres	Percent	Million cu. ft.	Percent	Million cu. ft.	Percent
Public	1,059.5	8.9	27.3	9.7	16.3	5.9
Private:						
Forest industry	1,671.3	14.0	50.1	17.8	39.6	14.3
Farm	6,810.5	57.1	146.9	52.3	162.2	58.5
Miscellaneous	2,393.6	20.0	56.6	20.2	59.3	21.3
Total	10,875.4	91.1	253.6	90.3	261.1	94.1
All ownerships	11,934.9	100.0	280.9	100.0	277.4	100.0

Table K.--Net volume and gross growth per acre on commercial forest land, by ownership and species group, 1958

Ownership and species group	Net volume per acre			Gross growth per acre		
	Bd. ft.	Cu. ft.	Cords	Bd. ft.	Cu. ft.	Cords
Public:						
Softwood	2,279	633.2	8.5	173	39.9	0.6
Hardwood	690	255.1	3.5	33	12.0	0.2
Total	2,969	888.3	12.0	206	51.9	0.8
Private:						
Forest industry:						
Softwood	1,598	466.3	6.3	127	40.3	0.6
Hardwood	1,298	424.7	5.7	67	18.7	0.3
Total	2,896	891.0	12.0	194	59.0	0.9
Farm:						
Softwood	1,081	319.6	4.3	107	28.6	0.4
Hardwood	1,071	368.1	5.0	61	20.0	0.3
Total	2,152	687.7	9.3	168	48.6	0.7
Miscellaneous:						
Softwood	1,229	373.1	5.1	106	31.6	0.5
Hardwood	1,231	388.2	5.2	55	17.6	0.3
Total	2,460	761.3	10.3	161	49.2	0.8
All ownerships:						
Softwood	1,289	378.7	5.1	115	31.8	0.5
Hardwood	1,101	370.0	5.0	58	18.6	0.3
Total	2,390	748.7	10.1	173	50.4	0.8

Part of this difference in stocking and average annual growth per acre between classes of ownership reflects differences in site quality. Forest industry lands tend to be the most productive lands in the State; 57 percent of the forest land in this ownership class is classed as good, compared to only 40 percent for private farm and 38 percent for miscellaneous private (table M). Sites on forest industry lands average 8 percent higher than the average for all forest lands in the State.

The better growth and stocking on public land, however, cannot be attributed to superior sites. The average site index is just about the same as the average for all forest land. Public lands have been under management much longer than areas recently acquired by pulp companies, and for this reason are currently more productive. Potentially, these industrial lands are among the most productive in the State, and under continued good management should outproduce the national forest lands. While 18 percent of the public forest land is classed as poor site, only 9 percent of the industrial forest land is classed as poor site.

Amount and kind of timber that will be available to forest industries in South Carolina depend very largely upon the action private forest landowners take to increase productivity of their land. Farmers and other miscellaneous owners not connected with forest industries own 77 percent of the total commercial forest area. Educational efforts of the State Extension Foresters and County Agricultural Agents, and on-the-ground technical woodland management assistance provided by Service Foresters of the State Forestry Commission and of industrial associations are helping these landowners to practice better forestry. Federal cost sharing with landowners for tree planting and timber stand improvement provided through the Agricultural Conservation Program is also contributing to better forestry. Yet, in spite of this effort, the small private ownerships include 81 percent of the forest land that would profit from treatment (table N).

The above percentages reflect the large area in farm ownership in the State and the poorer condition of farm woodlands. Sixty-two percent of the farm woodlands are in need of treatment, compared to 46 percent of the publicly-owned forest land and 48 percent of the forest land owned by forest industries (table O). The principal challenge in South Carolina is getting the thousands of small landowners not connected with forest industries to grow more and better-quality timber.

Table L. --Commercial forest land, by ownership and stocking, 1958

Ownership	Poorly stocked		Medium stocked		Well stocked		Total	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Public	180.7	17.0	220.2	20.8	658.6	62.2	1,059.5	100.0
Private:								
Forest industry	233.0	13.9	412.5	24.7	1,025.8	61.4	1,671.3	100.0
Farm	1,444.0	21.2	1,719.7	25.3	3,646.8	53.5	6,810.5	100.0
Miscellaneous	537.9	22.5	590.0	24.6	1,265.7	52.9	2,393.6	100.0
Total	2,214.9	20.4	2,722.2	25.0	5,938.3	54.6	10,875.4	100.0
All ownerships	2,395.6	20.1	2,942.4	24.6	6,596.9	55.3	11,934.9	100.0

Forest industries depend upon farm woodlots to supply 58 percent of the annual cut. Farmers own 57 percent of the forest area.

Table M. --Commercial forest land, by site quality and ownership, 1958

Ownership	Good site		Fair site		Poor site		Total	
	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent	Thousand acres	Percent
Public	503.3	47.5	367.2	34.7	189.0	17.8	1,059.5	100.0
Private:								
Forest industry	956.8	57.2	557.7	33.4	156.8	9.4	1,671.3	100.0
Farm	2,689.8	39.5	3,314.3	48.7	806.4	11.8	6,810.5	100.0
Miscellaneous	913.6	38.2	1,065.8	44.5	414.2	17.3	2,393.6	100.0
Total	4,560.2	41.9	4,937.8	45.4	1,377.4	12.7	10,875.4	100.0
All ownerships	5,063.5	42.4	5,305.0	44.5	1,566.4	13.1	11,934.9	100.0

Table N. --Commercial forest land needing regeneration, site preparation, and stand improvement, by ownership, 1958
(In thousand acres)

Ownership	Needing regeneration		Needing stand improvement	Total
	Without site preparation	With site preparation		
Public	25.5	258.2	193.1	476.8
Private:				
Forest industry	34.0	361.8	400.9	796.7
Farm	275.4	2,254.2	1,675.1	4,204.7
Miscellaneous	123.9	667.4	542.3	1,333.6
Total	433.3	3,283.4	2,618.3	6,335.0
All ownerships	458.8	3,541.6	2,811.4	6,811.8

Table O. --Commercial forest area needing treatment, by type of ownership, South Carolina, 1958

Ownership	Total	Needing treatment	
	Thousand acres	Thousand acres	Percent [1]
Public	1,034.4	476.8	46
Private:			
Forest industry	1,672.5	796.7	48
Farm	6,827.2	4,204.7	62
Miscellaneous	2,400.8	1,333.6	56
Total	10,900.5	6,335.0	58
All ownerships	11,934.9	6,811.8	57

[1] Percent of total acreage in type of ownership specified.

The future of South Carolina's forests is in the hands of the thousands of individual private owners of small woodland tracts. Farmers and other owners not connected with forest industries own three-fourths of the forest area in the state.

Appendix

ACCURACY OF FOREST SURVEY ESTIMATES

Forest resource information collected by the Forest Survey includes estimates based on sampling which have an associated sampling error. A large enough sample is taken to keep the sampling error below a specified minimum for forest area and timber volume. Nonsampling errors such as may arise from mistakes in judgment, measurement, recording, and compilation are kept to a minimum or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest Area

Estimates of forest area were based on the classification of 97,379 sample points systematically spaced on aerial photographs, followed by a ground check of 5,284 of these points, to provide the basis for making adjustments for changes in land use since the date of photography. The sampling error for the 12 million acres of forest area in the State is 0.5 percent.

Sampling errors for areas smaller than the State total and for forest proportions other than 61.5 percent can be obtained by referring to figures 5 and 6. For example, the sampling error of the forest proportion of 0.60 in the Southern Coastal Plain is 0.54 percent — from the lower curve from figure 6. Forest area in the Southern Coastal Plain includes 26 percent of the total forest area. The appropriate multiplying factor of 1.9 is obtained from figure 5; the sampling error is 0.54 x 1.9, or 1.03 percent.

In like manner, the sampling error for the estimate of forest area in a county may be determined. The error for the forest proportion of 0.509 in Bamberg County is 0.64 percent (fig. 6). The multiplying factor for the proportion 0.011 (128.3÷11,934.9) is 9.6 (fig. 5). The sampling error, then, is 9.6 x 0.64, or 6.1 percent.

Breakdown of Forest Area

State and Unit forest areas by ownership shown in table 2 of the Appendix are compiled from ownership records and do not have sampling errors. Other estimates of forest areas, such as forest area by forest type, stand size, stocking, and ownership by the above detail are based on the 4,021 ground plots and have a sampling error. Thus, ownership breakdowns based on the plots will differ slightly from those based on compilations from records.

Sampling error of forest area breakdowns depends upon the proportion that the breakdown is of the forest area and the proportion that the forest area is of the total forest area in the State. The sampling error for breakdowns for all forest area in the State may be obtained from the upper curve in figure 6. For example, the proportion of the forest area that is pine and oak-pine type in South Carolina is 6,483,700 acres ÷ 11,934,900 acres, or 0.543. The sampling error corresponding to this breakdown is 1.5 percent. This error includes the error for the estimate of the total forest area based on the average forest proportion of 61.5 percent.

The sampling error for the estimate of the area of pine and oak-pine type in the Southern Coastal Plain requires also the use of figure 6. The proportion of pine and oak-pine type is 0.50, which, if this was for the entire State, would give a sampling error of 1.6 percent. But the total commercial forest area in the Southern Coastal Plain is only 26 percent of the State total. The appropriate multiplying factor in figure 5 is 1.9. The sampling error is 1.6 x 1.9, or 3.0 percent.

The sampling error would be slightly higher if the forest proportion is lower than the State average of 61.5 percent and slightly lower if above this average. This difference through the range of forest proportions in the State represents a very small part of the total sampling error and for all practical purposes can be ignored.

Timber Volume

Estimates of inventory volume, growth, and timber cut are based on measurements recorded at 4,021 of the photo points classed as forest land. Sampling errors for the entire State and per billion are shown below:

Estimate	*Total* (Percent)	*Per billion* (Percent)
Inventory volume:		
Cubic feet	± 1.7	± 5.1
Board feet	± 2.0	±10.7
Gross growth—cubic feet	± 1.3	± 1.0
Timber cut—cubic feet	± 5.5	± 3.0

Estimates for detailed breakdown or for areas covering less than the State have larger sampling errors. The sampling error for part of the total is obtained by applying the appropriate multiplying factor corresponding to the proportionate part of the total to the total error for the State (fig. 5). For example, the sampling error for the volume

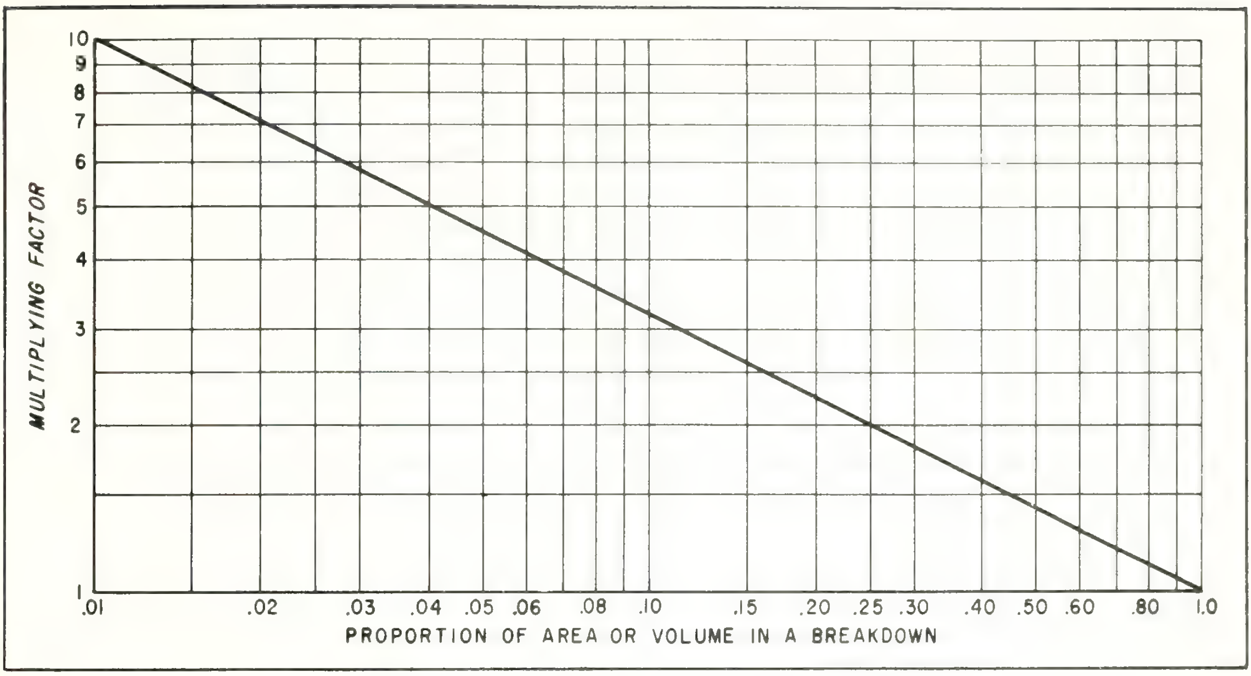


Figure 5.--Ratio of standard error of an area (or volume) breakdown to percentage standard error of estimate of total area or volume.

of yellow pine in cubic feet is 1.7 x 1.45, or 2.5 percent. The multiplying factor of 1.45 corresponds to the proportion of yellow pine to the total volume (4,116.6÷8,936.1 million cubic feet, or 0.46). The sampling error for the 886.4 million cubic feet of yellow pine in the Southern Coastal Plain is 1.7 x 3.1, or 5.3 percent.

Sampling errors for net growing stock volume range from a low of 7.0 percent for Berkeley County with 7,157,000 cords to a high of 19.0 percent for Lee County with 929,000 cords. As a rule, the sampling errors for individual county statistics are too high to be useful; they are presented by county to permit adding any combination of counties together until the total is large enough to meet the desired degree of reliability. To obtain an estimate with a sampling error of 10 percent, data for enough counties must be added together to total about 3.5 million cords.

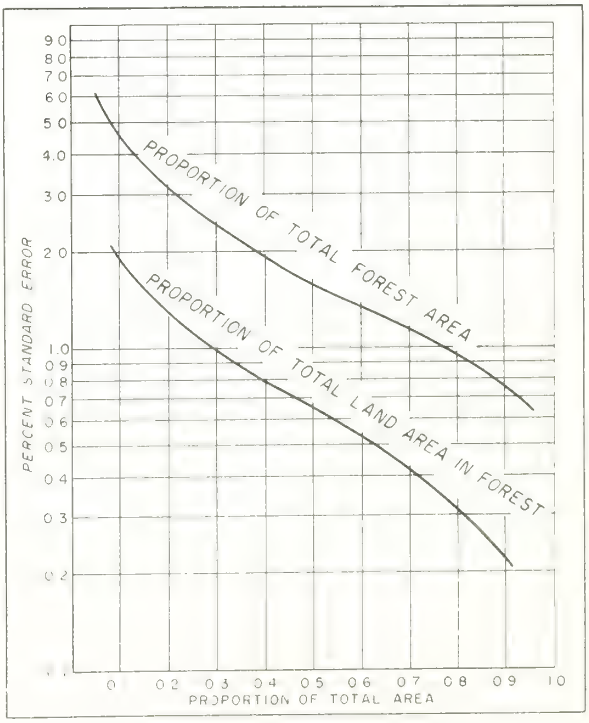


Figure 6.--Percent standard error by proportion of land area and commercial forest area. Errors for the proportion of forest area are based on 4,021 ground locations; also includes error of total forest area based on 61.5 percent forest area. Errors for proportion of total land area are based on the classification of 97,379 photo points; errors include the effect of shifts in land use.

HOW THE FOREST INVENTORY IS MADE

Forest statistics in South Carolina were estimated from a double sampling scheme. A large number of points on aerial photos were examined and classified by land use. A much smaller subsample of these points was selected for examination on the ground. The detailed procedure was as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes were obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class was used to estimate the acreage. This estimate was later checked and revised through the use of ground plots.
2. Ground sample plots were selected in a systematic manner from the forest land classifications made in Step 1, using an interval which would provide sufficient plots to meet established limits of error per billion cubic feet of timber. This resulted in a proportional sample of all existing timber stands. Field crews recorded measurements and observations on a variable plot with a basal area factor of 10 to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications were also checked on the ground to verify or adjust the area estimates based on these classifications.
3. Growth estimates were based on increment borings taken on all trees tallied. The volume of timber cut was computed from a tally of the stumps of trees cut on the plots during a specified period. Production surveys and utilization studies provided a breakdown of timber cut by product.
4. All field data were sent to Asheville for editing and were placed on punch cards for machine computing, sorting, and tabulation. Final estimates were based on statistical summaries of the data.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> *Commercial*: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically accessible now or in the future, and (c) not withdrawn from timber use.
>
> *Noncommercial*: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order, but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10-percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least ⅛ mile in width, which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between 1 acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

> *Yellow pine types*: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is longleaf, slash, loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.
>
> *White pine-hemlock type*: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is white pine or hemlock, singly or in combination.
>
> *Hardwood-pine type*: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.
>
> *Oak-hickory type*: Upland hardwood

forests in which 50 percent or more of the stand is composed of upland oaks, hickory, yellow-poplar, soft maple, and other associated hardwood species, except where yellow pines make up 25 to 49 percent, in which case the stand would be classified as oak-pine.

Maple-beech-birch type: Upland hardwood forests in which 50 percent or more of the stand is sugar maple, beech, or yellow birch, singly or in combination, except where yellow pines make up 25 to 49 percent of the stand.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oaks, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand. In the mountains, flat areas of forest bordering streams may be given this classification. River birch, sycamore, willow, and alder are characteristic of such areas.

Site Quality

Site quality of pine and oak-pine types is based on the total height of pine at age 50 years. For loblolly pine and oak-loblolly pine types, an index of 60 feet or shorter is regarded as poor site, 70 fair site, and 80 and taller good site.

For other pine and oak-pine types, a site index of 50 feet or shorter is considered poor site, 60 fair site, and 70 and taller good site.

Site quality of hardwood types is based upon the number of 16-foot saw logs in hardwood trees at maturity. Sites capable of growing hardwoods with three or more saw logs are considered good sites, two logs fair sites, and one log and less poor sites.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, International ¼-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

> *Large sawtimber*: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.
>
> *Small sawtimber*: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedlings and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class: All trees were tallied by 0.1-inch diameter classes and tabulated by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

> Softwood logs[2] must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.
>
> Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications[3] for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

---

[2] For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

[3] For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes loblolly, longleaf, slash, pond, shortleaf, pitch, Table-Mountain, Virginia pine, and spruce pine.

Other softwoods: White pine, hemlock, cypress, eastern redcedar, and white-cedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, willow, elm, hackberry, sycamore, magnolia, sweetbay, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, birch, black walnut, black locust, honeylocust, mulberry, sourwood, dogwood, holly, and persimmon.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International ¼-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs which are at least 4.0 inches in diameter inside bark is shown separately.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International ¼-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V=0.905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is ¼ inch.

Standard cord: A stacked pile, 4x4x8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Growth and Timber Cut

Gross growth: The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year.

Mortality: The net volume in trees dying from natural cause during the year.

Net growth: Gross growth minus mortality.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut: The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is a measure of the degree to which growing space is effectively utilized by trees.

The stocking of trees tallied (trees 1.0 inch and larger) was based on crown measurements of sound, free-growing trees. Understory trees, trees with less than 50 percent of their crown area exposed to direct light from above, were not used in determining stocking. For softwoods, stocking was equal to 3 times the crown area for 2-inch saplings, 2 times the crown area for 4-inch saplings, and 1.7 times the crown area for trees 5.0 inches and larger. For hardwoods, stocking was equal to the crown area.

The stocking of sound seedlings is based on 10-milacre quadrats along a 1-chain transect. Each stocked milacre quadrat completely free from overtopped trees 1.0 inch and larger counted as 10-percent stocking.

Table 1.--Land area[1] by class and Survey Unit, South Carolina, 1958

(In thousand acres)

Land class	State	Southern Coastal Plain	Northern Coastal Plain	Piedmont
Commercial forest land	11,934.9	3,112.9	4,676.2	4,145.8
Noncommercial forest land:				
Unproductive forest land	7.0	--	2.7	4.3
Productive-reserved forest land	73.9	5.6	14.4	53.9
Total forest	12,015.8	3,118.5	4,693.3	4,204.0
Nonforest land:				
Cropland	3,835.6	1,135.7	1,686.0	1,013.9
Improved pasture	743.5	164.4	171.8	407.3
Idle or abandoned	1,423.4	252.0	376.4	795.0
Marsh or prairie[2]	709.7	338.6	324.6	46.5
Urban and other[3]	676.5	168.3	234.0	274.2
Total nonforest	7,388.7	2,059.0	2,792.8	2,536.9
All land[4]	19,404.5	5,177.5	7,486.1	6,740.9

1/ From U. S. Bureau of the Census, land and water area of the United States, 1950.

2/ Includes 182,500 acres of water according to Survey standards but defined by the Bureau of the Census as land area.

3/ Includes urban, suburban residential and industrial areas, rights-of-way, cemeteries, schools, etc.

4/ Adjusted to include 9,300 acres classified as water by the Bureau of the Census but as land by Forest Survey.

Table 2.--Commercial forest land by ownership and Survey Unit, South Carolina, 1958

(In thousand acres)

Ownership class	State	Southern Coastal Plain	Northern Coastal Plain	Piedmont
National forest	566.3	--	237.3	329.0
Other Federal:				
Bureau of Land Management	--	--	--	--
Indian	--	--	--	--
Other Federal	292.7	157.1	104.7	30.9
Total	292.7	157.1	104.7	30.9
Other public:				
State	152.7	12.1	116.7	23.9
County and municipal	22.7	2.8	10.6	9.3
Total	175.4	14.9	127.3	33.2
Forest industry:				
Pulp company	1,164.2	320.3	535.1	308.8
Other wood-using industries	508.3	201.7	240.2	66.4
Total	1,672.5	522.0	775.3	375.2
Farm	6,827.2	1,931.0	2,488.8	2,407.4
Miscellaneous private	2,400.8	487.9	942.8	970.1
Total commercial	11,934.9	3,112.9	4,676.2	4,145.8

Table 3.--Commercial forest land by ownership,[1] stand size, and stocking, South Carolina, 1958

(In thousand acres)

Stand size and stocking	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Large sawtimber stands:							
Well stocked	1,451.8	155.1	8.3	17.5	264.8	743.0	263.1
Medium stocked	635.1	21.4	19.9	--	125.5	319.8	148.5
Poorly stocked	221.3	11.1	5.0	2.5	35.2	101.3	66.2
Total	2,308.2	187.6	33.2	20.0	425.5	1,164.1	477.8
Small sawtimber stands:							
Well stocked	1,875.3	182.9	32.8	32.3	322.6	960.2	344.5
Medium stocked	568.1	40.2	9.4	8.7	92.4	295.4	122.0
Poorly stocked	179.9	7.0	--	--	27.0	94.5	51.4
Total	2,623.3	230.1	42.2	41.0	442.0	1,350.1	517.9
Poletimber stands:							
Well stocked	2,125.1	76.0	36.4	31.9	283.0	1,259.6	438.2
Medium stocked	882.5	16.2	2.1	20.9	88.9	592.8	161.6
Poorly stocked	506.7	--	3.1	13.1	44.7	333.8	112.0
Total	3,514.3	92.2	41.6	65.9	416.6	2,186.2	711.8
Seedling and sapling stands:							
Well stocked	1,140.2	10.5	51.8	23.1	155.4	679.5	219.9
Medium stocked	842.2	9.6	50.1	21.7	105.7	497.2	157.9
Poorly stocked	759.5	14.0	30.6	19.9	55.9	472.9	166.2
Total	2,741.9	34.1	132.5	64.7	317.0	1,649.6	544.0
Nonstocked and other areas	747.2	4.9	31.9	37.6	70.2	460.5	142.1
All classes	11,934.9	548.9	281.4	229.2	1,671.3	6,810.5	2,393.6

---

[1] Forest area by ownership is estimated from the ground samples. These estimates include a sampling error and for this reason differ slightly from areas compiled from ownership records shown in tables 2 and 37.

Table 4.--Commercial forest land by ownership,[1] major forest type, and stocking, South Carolina, 1958

(In thousand acres)

Type and stocking	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:							
Well stocked	3,737.2	316.3	101.2	66.7	637.4	1,903.7	711.9
Medium stocked	1,102.1	48.6	30.4	48.4	159.7	552.4	262.6
Poorly stocked	749.3	2.9	25.3	17.2	80.2	442.0	181.7
Total	5,588.6	367.8	156.9	132.3	877.3	2,898.1	1,156.2
Oak-pine type:							
Well stocked	610.9	39.1	3.1	--	114.6	333.6	120.5
Medium stocked	319.9	15.6	4.1	--	29.7	213.0	57.5
Poorly stocked	164.2	2.9	3.1	--	16.9	99.8	41.5
Total	1,095.0	57.6	10.3	--	161.2	646.4	219.5
Hardwood types:							
Well stocked	2,248.8	69.1	25.0	38.1	273.8	1,409.5	433.3
Medium stocked	1,520.4	23.2	47.0	2.9	223.1	954.3	269.9
Poorly stocked	1,482.1	31.2	42.2	55.9	135.9	902.2	314.7
Total	5,251.3	123.5	114.2	96.9	632.8	3,266.0	1,017.9
All types:							
Well stocked	6,596.9	424.5	129.3	104.8	1,025.8	3,646.8	1,265.7
Medium stocked	2,942.4	87.4	81.5	51.3	412.5	1,719.7	590.0
Poorly stocked	2,395.6	37.0	70.6	73.1	233.0	1,444.0	537.9
Total	11,934.9	548.9	281.4	229.2	1,671.3	6,810.5	2,393.6

---

[1] Forest area by ownership is estimated from the ground samples. These estimates include a sampling error and for this reason differ slightly from areas compiled from ownership records shown in tables 2 and 37.

Table 5.--Commercial forest land by forest type and Survey Unit, South Carolina, 1958

(In thousand acres)

Forest type	State	Southern Coastal Plain	Northern Coastal Plain	Piedmont
Softwood types:				
Longleaf pine	723.0	353.1	369.9	--
Slash pine	199.1	172.3	26.8	--
Loblolly pine	2,819.4	567.9	1,284.2	967.3
Shortleaf pine	1,235.8	49.1	85.1	1,101.6
Pond pine	495.8	162.5	333.3	--
Virginia pine	115.5	--	4.3	111.2
Total	5,588.6	1,304.9	2,103.6	2,180.1
Hardwood types:				
Oak-pine	1,095.0	266.8	390.8	437.4
Oak-hickory:				
Upland hdwds.	1,588.2	197.8	249.3	1,141.1
Scrub oak	465.6	240.9	216.5	8.2
Oak-gum-cypress:				
Bench-hardwood	360.5	90.6	185.6	84.3
Water-oak-gum	2,301.8	767.8	1,239.3	294.7
Gum-cypress	535.2	244.1	291.1	--
Total	6,346.3	1,808.0	2,572.6	1,965.7
All types	11,934.9	3,112.9	4,676.2	4,145.8

Table 6.--Commercial forest land by ownership,[1] major forest type, site quality, and Survey Unit, South Carolina, 1958

(In thousand acres)

Type and site quality[2]	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
STATE							
Pine types:							
Poor site	829.3	48.3	31.6	24.9	117.9	344.0	262.6
Fair site	1,917.1	100.9	45.0	53.5	230.4	1,088.6	398.7
Good site	2,842.2	218.6	80.3	53.9	529.0	1,465.5	494.9
Total	5,588.6	367.8	156.9	132.3	877.3	2,898.1	1,156.2
Oak-pine type:							
Poor site	102.4	4.3	--	--	8.0	51.4	38.7
Fair site	271.5	6.6	7.2	--	9.0	191.1	57.6
Good site	721.1	46.7	3.1	--	144.2	403.9	123.2
Total	1,095.0	57.6	10.3	--	161.2	646.4	219.5
Hardwood types:							
Poor site	634.7	--	34.0	45.9	30.9	411.0	112.9
Fair site	3,116.4	77.6	42.0	34.4	318.3	2,034.6	609.5
Good site	1,500.2	45.9	38.2	16.6	283.6	820.4	295.5
Total	5,251.3	123.5	114.2	96.9	632.8	3,266.0	1,017.9
All types:							
Poor site	1,566.4	52.6	65.6	70.8	156.8	806.4	414.2
Fair site	5,305.0	185.1	94.2	87.9	557.7	3,314.3	1,065.8
Good site	5,063.5	311.2	121.6	70.5	956.8	2,689.8	913.6
Total	11,934.9	548.9	281.4	229.2	1,671.3	6,810.5	2,393.6
SOUTHERN COASTAL PLAIN							
Pine types:							
Poor site	75.8	--	6.2	--	15.1	36.4	18.1
Fair site	389.9	--	18.7	2.9	29.3	255.4	83.6
Good site	839.2	--	52.3	--	189.0	456.4	141.5
Total	1,304.9	--	77.2	2.9	233.4	748.2	243.2
Oak-pine type:							
Poor site	7.5	--	--	--	--	5.5	2.0
Fair site	28.7	--	3.1	--	2.0	20.5	3.1
Good site	230.6	--	3.1	--	54.2	135.0	38.3
Total	266.8	--	6.2	--	56.2	161.0	43.4
Hardwood types:							
Poor site	277.8	--	18.7	--	23.6	198.8	36.7
Fair site	754.5	--	29.0	2.5	73.4	551.7	97.9
Good site	508.9	--	31.2	2.5	135.7	272.6	66.9
Total	1,541.2	--	78.9	5.0	232.7	1,023.1	201.5
All types:							
Poor site	361.1	--	24.9	--	38.7	240.7	56.8
Fair site	1,173.1	--	50.8	5.4	104.7	827.6	184.6
Good site	1,578.7	--	86.6	2.5	378.9	864.0	246.7
Total	3,112.9	--	162.3	7.9	522.3	1,932.3	488.1

---

[1] Forest area by ownership is estimated from the ground samples. These estimates include a sampling error and for this reason differ slightly from areas compiled from ownership records shown in tables 2 and 37.

[2] See description of site quality under Definition of Terms.

Table 6.--Commercial forest land by ownership,[1] major forest type, site quality, and Survey Unit, South Carolina, 1958 (continued)

(In thousand acres)

Type and site quality[2]	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
NORTHERN COASTAL PLAIN							
Pine types:							
Poor site	154.3	5.8	17.1	16.1	29.8	45.2	40.3
Fair site	623.6	26.1	9.3	38.1	113.2	321.6	115.3
Good site	1,325.7	108.7	11.5	40.8	263.6	687.9	213.2
Total	2,103.6	140.6	37.9	95.0	406.6	1,054.7	368.8
Oak-pine type:							
Poor site	6.3	--	--	--	--	4.1	2.2
Fair site	54.3	2.9	--	--	7.0	27.8	16.6
Good site	330.2	26.1	--	--	55.0	188.9	60.2
Total	390.8	29.0	--	--	62.0	220.8	79.0
Hardwood types:							
Poor site	268.1	--	15.3	42.0	7.3	143.9	59.6
Fair site	1,189.1	21.7	4.3	24.5	176.0	703.8	258.8
Good site	724.6	30.4	2.9	10.2	126.1	374.7	180.3
Total	2,181.8	52.1	22.5	76.7	309.4	1,222.4	498.7
All types:							
Poor site	428.7	5.8	32.4	58.1	37.1	193.2	102.1
Fair site	1,867.0	50.7	13.6	62.6	296.2	1,053.2	390.7
Good site	2,380.5	165.2	14.4	51.0	444.7	1,251.5	453.7
Total	4,676.2	221.7	60.4	171.7	778.0	2,497.9	946.5
PIEDMONT							
Pine types:							
Poor site	599.2	42.5	8.3	8.8	73.0	262.4	204.2
Fair site	903.6	74.8	17.0	12.5	87.9	511.6	199.8
Good site	677.3	109.9	16.5	13.1	76.4	321.2	140.2
Total	2,180.1	227.2	41.8	34.4	237.3	1,095.2	544.2
Oak-pine type:							
Poor site	88.6	4.3	--	--	8.0	41.8	34.5
Fair site	188.5	3.7	4.1	--	--	142.8	37.9
Good site	160.3	20.6	--	--	35.0	80.0	24.7
Total	437.4	28.6	4.1	--	43.0	264.6	97.1
Hardwood types:							
Poor site	88.8	--	--	3.9	--	68.3	16.6
Fair site	1,172.8	55.9	8.7	7.4	68.9	779.1	252.8
Good site	266.7	15.5	4.1	3.9	21.8	173.1	48.3
Total	1,528.3	71.4	12.8	15.2	90.7	1,020.5	317.7
All types:							
Poor site	776.6	46.8	8.3	12.7	81.0	372.5	255.3
Fair site	2,264.9	134.4	29.8	19.9	156.8	1,433.5	490.5
Good site	1,104.3	146.0	20.6	17.0	133.2	574.3	213.2
Total	4,145.8	327.2	58.7	49.6	371.0	2,380.3	959.0

[1] Forest area by ownership is estimated from the ground samples. These estimates include a sampling error and for this reason differ slightly from areas compiled from ownership records shown in tables 2 and 37.

[2] See description of site quality under Definition of Terms.

Table 7.--Commercial forest land[1] by ownership, area condition, and Survey Unit, South Carolina, 1958

(In thousand acres)

Area condition	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
			STATE				
Well stocked with pine	2,964.4	261.8	90.3	59.6	531.3	1,401.3	620.1
Medium stocking of pine:							
Other stocking[2] less than 20 percent	432.1	18.4	16.8	29.5	45.4	239.0	83.0
Other stocking 20 percent or more	1,293.1	82.1	22.4	21.6	204.4	740.8	221.8
Poor stocking of pine:							
Other stocking less than 20 percent:							
Pine seed source adequate	47.3	--	--	--	6.8	25.3	15.2
Pine seed source inadequate	458.8	--	12.6	12.9	34.0	275.4	123.9
Other stocking 20 percent or more:							
Pine seed source adequate	419.3	37.2	2.2	8.7	70.7	239.3	61.2
Pine seed source inadequate	3,122.3	82.9	69.4	57.8	291.1	2,014.9	606.2
Total all conditions	8,737.3	482.4	213.7	190.1	1,183.7	4,936.0	1,731.4
			SOUTHERN COASTAL PLAIN				
Well stocked with pine	530.8	--	49.2	2.9	118.6	265.7	94.4
Medium stocking of pine:							
Other stocking[2] less than 20 percent	133.1	--	12.5	--	23.7	82.5	14.4
Other stocking 20 percent or more	289.7	--	3.1	--	40.0	212.3	34.3
Poor stocking of pine:							
Other stocking less than 20 percent:							
Pine seed source adequate	11.6	--	--	--	--	8.8	2.8
Pine seed source inadequate	181.9	--	6.2	--	11.9	122.7	41.1
Other stocking 20 percent or more:							
Pine seed source adequate	107.8	--	--	--	32.0	61.7	14.1
Pine seed source inadequate	755.6	--	39.5	--	95.9	488.8	131.4
Total all conditions	2,010.5	--	110.5	2.9	322.1	1,242.5	332.5

[1] Excludes bottomland hardwood type.

[2] Includes hardwood growing stock, culls, and inhibiting shrubs.

Table 7.--Commercial forest land[1] by ownership, area condition, and Survey Unit, South Carolina, 1958 (continued)

(In thousand acres)

Area condition	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
			NORTHERN COASTAL PLAIN				
Well stocked with pine	1,187.6	112.3	12.2	44.1	241.6	561.1	216.3
Medium stocking of pine:							
Other stocking[2] less than 20 percent	131.0	5.0	4.3	20.8	12.9	75.7	12.3
Other stocking 20 percent or more	544.4	34.8	6.4	12.9	104.1	286.5	99.7
Poor stocking of pine:							
Other stocking less than 20 percent:							
Pine seed source adequate	19.6	--	--	--	2.3	12.9	4.4
Pine seed source inadequate	149.4	--	6.4	12.9	18.6	79.1	32.4
Other stocking 20 percent or more:							
Pine seed source adequate	147.1	9.4	2.2	8.7	29.6	79.7	17.5
Pine seed source inadequate	781.0	15.9	21.7	38.2	86.1	465.9	153.2
Total all conditions	2,960.1	177.4	53.2	137.6	495.2	1,560.9	535.8
			PIEDMONT				
Well stocked with pine	1,246.0	149.5	28.9	12.6	171.1	574.5	309.4
Medium stocking of pine:							
Other stocking[2] less than 20 percent	168.0	13.4	--	8.7	8.8	80.8	56.3
Other stocking 20 percent or more	459.0	47.3	12.9	8.7	60.3	242.0	87.8
Poor stocking of pine:							
Other stocking less than 20 percent:							
Pine seed source adequate	16.1	--	--	--	4.5	3.6	8.0
Pine seed source inadequate	127.5	--	--	--	3.5	73.6	50.4
Other stocking 20 percent or more:							
Pine seed source adequate	164.4	27.8	--	--	9.1	97.9	29.6
Pine seed source inadequate	1,585.7	67.0	8.2	19.6	109.1	1,060.2	321.6
Total all conditions	3,766.7	305.0	50.0	49.6	366.4	2,132.6	863.1

[1] Excludes bottomland hardwood type.
[2] Includes hardwood growing stock, culls, and inhibiting shrubs.

Table 8.--Commercial forest land cut over annually, by ownership and Survey Unit, South Carolina, 1957

(In thousand acres)

Ownership	State	Southern Coastal Plain	Northern Coastal Plain	Piedmont
Public	32.0	1.0	15.2	15.8
Private:				
Pulp company	89.3	24.4	32.7	32.2
Other wood-using industries	20.9	11.0	8.5	1.4
Farm	460.7	111.6	138.1	211.0
Miscellaneous private	153.2	27.5	42.0	83.7
Total	724.1	174.5	221.3	328.3
Total cutover	756.1	175.5	236.5	344.1

Table 9.--Net volume of sawtimber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958

(In million board feet[1])

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
STATE							
Pine types:							
Softwood	11,829.7	1,590.8	204.3	274.4	1,897.4	5,594.1	2,268.7
Hardwood	834.1	82.6	7.6	9.8	172.8	400.3	161.0
Total	12,663.8	1,673.4	211.9	284.2	2,070.2	5,994.4	2,429.7
Oak-pine type:							
Softwood	1,358.9	152.0	--	--	246.7	712.5	247.7
Hardwood	1,227.2	125.9	--	--	215.1	658.6	227.6
Total	2,586.1	277.9	--	--	461.8	1,371.1	475.3
Hardwood types:							
Softwood	2,199.6	160.2	19.7	13.4	527.0	1,054.3	425.0
Hardwood	11,080.9	231.1	200.4	73.5	1,781.3	6,237.2	2,557.4
Total	13,280.5	391.3	220.1	86.9	2,308.3	7,291.5	2,982.4
All types:							
Softwood	15,388.2	1,903.0	224.0	287.8	2,671.1	7,360.9	2,941.4
Hardwood	13,142.2	439.6	208.0	83.3	2,169.2	7,296.1	2,946.0
Total	28,530.4	2,342.6	432.0	371.1	4,840.3	14,657.0	5,887.4
SOUTHERN COASTAL PLAIN							
Pine types:							
Softwood	2,657.6	--	23.5	14.9	561.9	1,567.5	489.8
Hardwood	194.2	--	2.8	--	56.2	106.8	28.4
Total	2,851.8	--	26.3	14.9	618.1	1,674.3	518.2
Oak-pine type:							
Softwood	365.7	--	--	--	112.3	200.4	53.0
Hardwood	325.6	--	--	--	104.0	163.0	58.6
Total	691.3	--	--	--	216.3	363.4	111.6
Hardwood types:							
Softwood	824.1	--	13.2	--	281.5	462.6	66.8
Hardwood	3,181.4	--	194.4	7.2	618.6	1,930.7	430.5
Total	4,005.5	--	207.6	7.2	900.1	2,393.3	497.3
All types:							
Softwood	3,847.4	--	36.7	14.9	955.7	2,230.5	609.6
Hardwood	3,701.2	--	197.2	7.2	778.8	2,200.5	517.5
Total	7,548.6	--	233.9	22.1	1,734.5	4,431.0	1,127.1

---

[1] International 1/4-inch rule.

Table 9.--Net volume of sawtimber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

(In million board feet[1])

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
NORTHERN COASTAL PLAIN							
Pine types:							
Softwood	5,500.0	578.7	99.8	179.0	887.5	2,722.9	1,032.1
Hardwood	376.8	33.4	4.8	2.2	97.6	167.5	71.3
Total	5,876.8	612.1	104.6	181.2	985.1	2,890.4	1,103.4
Oak-pine type:							
Softwood	648.2	86.8	--	--	106.7	326.1	128.6
Hardwood	493.9	50.0	--	--	77.1	256.7	110.1
Total	1,142.1	136.8	--	--	183.8	582.8	238.7
Hardwood types:							
Softwood	1,224.3	135.1	6.5	13.4	225.3	517.8	326.2
Hardwood	5,493.5	112.8	6.0	66.3	990.7	2,652.9	1,664.8
Total	6,717.8	247.9	12.5	79.7	1,216.0	3,170.7	1,991.0
All types:							
Softwood	7,372.5	800.6	106.3	192.4	1,219.5	3,566.8	1,486.9
Hardwood	6,364.2	196.2	10.8	68.5	1,165.4	3,077.1	1,846.2
Total	13,736.7	996.8	117.1	260.9	2,384.9	6,643.9	3,333.1
PIEDMONT							
Pine types:							
Softwood	3,672.1	1,012.1	81.0	80.5	448.0	1,303.7	746.8
Hardwood	263.1	49.2	--	7.6	19.0	126.0	61.3
Total	3,935.2	1,061.3	81.0	88.1	467.0	1,429.7	808.1
Oak-pine type:							
Softwood	345.0	65.2	--	--	27.7	186.0	66.1
Hardwood	407.7	75.9	--	--	34.0	238.9	58.9
Total	752.7	141.1	--	--	61.7	424.9	125.0
Hardwood types:							
Softwood	151.2	25.1	--	--	20.2	73.9	32.0
Hardwood	2,406.0	118.3	--	--	172.0	1,653.6	462.1
Total	2,557.2	143.4	--	--	192.2	1,727.5	494.1
All types:							
Softwood	4,168.3	1,102.4	81.0	80.5	495.9	1,563.6	844.9
Hardwood	3,076.8	243.4	--	7.6	225.0	2,018.5	582.3
Total	7,245.1	1,345.8	81.0	88.1	720.9	3,582.1	1,427.2

---

[1] International 1/4-inch rule.

Table 10.--Net volume of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958

Type and species group	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
STATE														
Growing stock:														
Pine types:														
Softwood	3,644.7	50,156	440.0	5,910	70.6	985	83.4	1,149	594.9	8,212	1,731.9	23,884	723.9	10,016
Hardwood	367.7	5,212	43.0	608	3.0	41	4.9	72	60.6	838	193.5	2,779	62.7	874
Total	4,012.4	55,368	483.0	6,518	73.6	1,026	88.3	1,221	655.5	9,050	1,925.4	26,663	786.6	10,890
Oak-pine type:														
Softwood	348.1	4,592	33.9	431	--	--	--	--	62.3	821	186.9	2,478	65.0	862
Hardwood	470.0	6,498	48.7	674	--	--	--	--	82.7	1,142	251.9	3,480	86.7	1,202
Total	818.1	11,090	82.6	1,105	--	--	--	--	145.0	1,963	438.8	5,958	151.7	2,064
Hardwood typs:														
Softwood	526.9	6,472	34.8	401	4.6	57	3.7	48	122.0	1,470	257.8	3,232	104.0	1,264
Hardwood	3,578.7	48,187	82.7	1,111	63.0	857	24.9	334	566.5	7,584	2,061.9	27,873	779.7	10,428
Total	4,105.6	54,659	117.5	1,512	67.6	914	28.6	382	688.5	9,054	2,319.7	31,105	883.7	11,692
All types:														
Softwood	4,519.7	61,220	508.7	6,742	75.2	1,042	87.1	1,197	779.2	10,503	2,176.6	29,594	892.9	12,142
Hardwood	4,416.4	59,897	174.4	2,393	66.0	898	29.8	406	709.8	9,564	2,507.3	34,132	929.1	12,504
Total	8,936.1	121,117	683.1	9,135	141.2	1,940	116.9	1,603	1,489.0	20,067	4,683.9	63,726	1,822.0	24,646
Cull timber:														
Softwood	166.7	2,224	8.6	111	2.7	36	5.1	64	21.5	283	82.5	1,121	46.3	609
Hardwood	1,047.1	14,257	40.4	562	20.8	284	7.9	116	166.1	2,234	575.7	7,885	236.2	3,176
Total	1,213.8	16,481	49.0	673	23.5	320	13.0	180	187.6	2,517	658.2	9,006	282.5	3,785
SOUTHERN COASTAL PLAIN														
Growing stock:														
Pine types:														
Softwood	759.3	10,218	--	--	15.2	227	4.2	57	164.0	2,220	434.3	5,808	141.6	1,906
Hardwood	68.6	946	--	--	0.7	8	--	--	14.3	187	44.6	630	9.0	121
Total	827.9	11,164	--	--	15.9	235	4.2	57	178.3	2,407	478.9	6,438	150.6	2,027
Oak-pine type:														
Softwood	82.0	1,043	--	--	--	--	--	--	26.1	334	45.6	585	10.3	124
Hardwood	109.9	1,490	--	--	--	--	--	--	31.5	426	62.3	850	16.1	214
Total	191.9	2,533	--	--	--	--	--	--	57.6	760	107.9	1,435	26.4	338
Hardwood types:														
Softwood	199.6	2,435	--	--	3.3	40	0.3	4	67.2	815	113.5	1,399	15.3	177
Hardwood	1,031.5	13,876	--	--	61.8	841	4.7	65	199.9	2,683	643.3	8,686	121.8	1,601
Total	1,231.1	16,311	--	--	65.1	881	5.0	69	267.1	3,498	756.8	10,085	137.1	1,778
All types:														
Softwood	1,040.9	13,696	--	--	18.5	267	4.5	61	257.3	3,369	593.4	7,792	167.2	2,207
Hardwood	1,210.0	16,312	--	--	62.5	849	4.7	65	245.7	3,296	750.2	10,166	146.9	1,936
Total	2,250.9	30,008	--	--	81.0	1,116	9.2	126	503.0	6,665	1,343.6	17,958	314.1	4,143
Cull timber:														
Softwood	37.4	482	--	--	0.8	10	--	--	8.6	107	20.2	264	7.8	101
Hardwood	319.5	4,291	--	--	14.6	202	0.4	5	55.3	734	197.7	2,675	51.5	675
Total	356.9	4,773	--	--	15.4	212	0.4	5	63.9	841	217.9	[illegible]	[illegible]	776

Table 10.--Net volume of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

Type and species group	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
NORTHERN COASTAL PLAIN														
Growing stock:														
Pine types:														
Softwood	1,535.5	20,844	156.8	2,098	24.7	326	55.6	769	270.3	3,713	731.3	9,865	296.8	4,073
Hardwood	156.9	2,209	10.6	142	2.3	33	1.7	24	33.0	451	79.5	1,137	29.8	422
Total	1,692.4	23,053	167.4	2,240	27.0	359	57.3	793	303.3	4,164	810.8	11,002	326.6	4,495
Oak-pine type:														
Softwood	153.7	1,994	19.1	241	--	—	—	--	25.7	336	78.1	1,015	30.8	402
Hardwood	179.6	2,465	21.6	305	--	--	--	--	33.8	468	87.7	1,198	36.5	494
Total	333.3	4,459	40.7	546	--	--	--	--	59.5	804	165.8	2,213	67.3	896
Hardwood types:														
Softwood	272.9	3,277	30.0	346	1.3	17	3.4	44	48.5	568	113.3	1,385	76.4	917
Hardwood	1,666.9	22,273	38.7	514	1.2	16	18.6	246	300.1	3,998	830.1	11,162	478.2	6,337
Total	1,939.8	25,550	68.7	860	2.5	33	22.0	290	348.6	4,566	943.4	12,547	554.6	7,254
All types:														
Softwood	1,962.1	26,115	205.9	2,685	26.0	343	59.0	813	344.5	4,617	922.7	12,265	404.0	5,392
Hardwood	2,003.4	26,947	70.9	961	3.5	49	20.3	270	366.9	4,917	997.3	13,497	544.5	7,253
Total	3,965.5	53,062	276.8	3,646	29.5	392	79.3	1,083	711.4	9,534	1,920.0	25,762	948.5	12,645
Cull timber:														
Softwood	67.1	858	4.2	52	1.2	17	5.1	64	6.1	78	29.9	393	20.6	254
Hardwood	464.1	6,242	20.1	276	5.7	75	5.1	76	90.6	1,215	219.3	2,962	123.3	1,638
Total	531.2	7,100	24.3	328	6.9	92	10.2	140	96.7	1,293	249.2	3,355	143.9	1,892
PIEDMONT														
Growing stock:														
Pine types:														
Softwood	1,349.9	19,094	283.2	3,812	30.7	432	23.6	323	160.6	2,279	566.3	8,211	285.5	4,037
Hardwood	142.2	2,057	32.4	466	--	--	3.2	48	13.3	200	69.4	1,012	23.9	331
Total	1,492.1	21,151	315.6	4,278	30.7	432	26.8	371	173.9	2,479	635.7	9,223	309.4	4,368
Oak-pine type:														
Softwood	112.4	1,555	14.8	190	--	--	--	--	10.5	151	63.2	878	23.9	336
Hardwood	180.5	2,543	27.1	369	--	--	--	--	17.4	248	101.9	1,432	34.1	494
Total	292.9	4,098	41.9	559	--	--	--	--	27.9	399	165.1	2,310	58.0	830
Hardwood types:														
Softwood	54.4	760	4.8	55	--	--	--	--	6.3	87	31.0	448	12.3	170
Hardwood	880.3	12,038	44.0	597	--	--	1.6	23	66.5	903	588.5	8,025	179.7	2,490
Total	934.7	12,798	48.8	652	--	--	1.6	23	72.8	990	619.5	8,473	192.0	2,660
All types:														
Softwood	1,516.7	21,409	302.8	4,057	30.7	432	23.6	323	177.4	2,517	660.5	9,537	321.7	4,543
Hardwood	1,203.0	16,638	103.5	1,432	--	--	4.8	71	97.2	1,351	759.8	10,469	237.7	3,315
Total	2,719.7	38,047	406.3	5,489	30.7	432	28.4	394	274.6	3,868	1,420.3	20,006	559.4	7,858
Cull timber:														
Softwood	62.2	884	4.4	59	0.7	9	--	--	6.8	98	32.4	464	17.9	254
Hardwood	263.5	3,724	20.3	286	0.5	7	2.4	35	20.2	285	158.7	2,248	61.4	863
Total	325.7	4,608	24.7	345	1.2	16	2.4	35	27.0	383	191.1	2,712	79.3	1,117

Table 11a.--Net volume of sawtimber and growing stock on commercial forest land by species group and stand size for the entire State of South Carolina, 1958

Stand size	Total	Softwood	Hardwood
SAWTIMBER (In million bd. ft.)			
Sawtimber stands	25,374.0	13,469.6	11,904.4
Poletimber stands	2,059.9	1,235.8	824.1
Seedling and sapling stands	885.1	558.2	326.9
Nonstocked and other areas	211.4	124.6	86.8
Total	28,530.4	15,388.2	13,142.2
GROWING STOCK (In million cu. ft.)			
Sawtimber stands	6,950.2	3,369.7	3,580.5
Poletimber stands	1,706.1	980.1	726.0
Seedling and sapling stands	225.9	138.7	87.2
Nonstocked and other areas	53.9	31.2	22.7
Total	8,936.1	4,519.7	4,416.4
GROWING STOCK (In thousand cords)			
Sawtimber stands	91,769	44,110	47,659
Poletimber stands	25,637	14,840	10,797
Seedling and sapling stands	2,997	1,853	1,144
Nonstocked and other areas	714	417	297
Total	121,117	61,220	59,897

Table 11b.--Net volume of sawtimber and growing stock on commercial forest land by species group and stand size for the Southern Coastal Plain of South Carolina, 1958

Stand size	Total	Softwood	Hardwood
SAWTIMBER (In million bd. ft.)			
Sawtimber stands	6,747.5	3,321.0	3,426.5
Poletimber stands	444.9	286.1	158.8
Seedling and sapling stands	277.1	181.1	96.0
Nonstocked and other areas	79.1	59.2	19.9
Total	7,548.6	3,847.4	3,701.2
GROWING STOCK (In million cu. ft.)			
Sawtimber stands	1,838.1	810.2	1,027.9
Poletimber stands	329.0	175.7	153.3
Seedling and sapling stands	64.4	41.0	23.4
Nonstocked and other areas	19.4	14.0	5.4
Total	2,250.9	1,040.9	1,210.0
GROWING STOCK (In thousand cords)			
Sawtimber stands	24,081	10,414	13,667
Poletimber stands	4,835	2,564	2,271
Seedling and sapling stands	836	534	302
Nonstocked and other areas	256	184	72
Total	30,008	13,696	16,312

Table 11c.--Net volume of sawtimber and growing stock on commercial forest land by species group and stand size for the Northern Coastal Plain of South Carolina, 1958

Stand size	Total	Softwood	Hardwood
SAWTIMBER (In million bd. ft.)			
Sawtimber stands	12,346.0	6,480.2	5,865.8
Poletimber stands	890.6	548.1	342.5
Seedling and sapling stands	412.9	281.6	131.3
Nonstocked and other areas	87.2	62.6	24.6
Total	13,736.7	7,372.5	6,364.2
GROWING STOCK (In million cu. ft.)			
Sawtimber stands	3,260.4	1,553.8	1,706.6
Poletimber stands	584.7	326.5	258.2
Seedling and sapling stands	98.9	66.6	32.3
Nonstocked and other areas	21.5	15.2	6.3
Total	3,965.5	1,962.1	2,003.4
GROWING STOCK (In thousand cords)			
Sawtimber stands	42,762	20,146	22,616
Poletimber stands	8,717	4,887	3,830
Seedling and sapling stands	1,298	880	418
Nonstocked and other areas	285	202	83
Total	53,062	26,115	26,947

Table 11d.--Net volume of sawtimber and growing stock on commercial forest land by species group and stand size for the Piedmont of South Carolina, 1958

Stand size	Total	Softwood	Hardwood
SAWTIMBER (In million bd. ft.)			
Sawtimber stands	6,280.5	3,668.4	2,612.1
Poletimber stands	724.4	401.6	322.8
Seedling and sapling stands	195.1	95.5	99.6
Nonstocked and other areas	45.1	2.8	42.3
Total	7,245.1	4,168.3	3,076.8
GROWING STOCK (In million cu. ft.)			
Sawtimber stands	1,851.7	1,005.7	846.0
Poletimber stands	792.4	477.9	314.5
Seedling and sapling stands	62.6	31.1	31.5
Nonstocked and other areas	13.0	2.0	11.0
Total	2,719.7	1,516.7	1,203.0
GROWING STOCK (In thousand cords)			
Sawtimber stands	24,926	13,550	11,376
Poletimber stands	12,085	7,389	4,696
Seedling and sapling stands	863	439	424
Nonstocked and other areas	173	31	142
Total	38,047	21,409	16,638

Table 12.--Net volume of sawtimber and growing stock on commercial forest land by species and Survey Unit, South Carolina, 1958

Species	STATE			SOUTHERN COASTAL PLAIN		
	Sawtimber	Growing stock		Sawtimber	Growing stock	
	Million bd.-ft.1/	Million cu. ft.2/	Thousand cords3/	Million bd.-ft.1/	Million cu. ft.2/	Thousand cords3/
Yellow pine:						
Longleaf pine	1,586.8	510.3	7,045	665.6	214.9	2,936
Slash pine	214.3	69.7	965	192.7	62.9	873
Loblolly pine	8,645.5	2,348.3	31,581	1,867.1	464.8	6,094
Shortleaf pine	2,085.6	814.5	11,699	130.8	37.9	513
Pond pine	980.7	302.8	4,179	310.6	93.3	1,268
Virginia pine	83.0	54.5	796	--	--	--
Other yellow pine	64.4	16.5	215	51.1	12.6	162
Total	13,660.3	4,116.6	56,480	3,217.9	886.4	11,846
Other softwoods:						
White pine	4/151.0	5/25.8	6/284	--	--	--
Cypress	1,501.0	349.1	4,091	629.5	154.5	1,850
Redcedar	75.9	28.2	365	--	--	--
Total	1,727.9	403.1	4,740	629.5	154.5	1,850
Total softwoods	15,388.2	4,519.7	61,220	3,847.4	1,040.9	13,696
Preferred hardwoods:						
Sweetgum	2,624.7	860.8	11,625	730.2	223.4	2,974
Yellow-poplar	845.5	240.1	3,188	153.6	43.4	574
White and swamp chestnut oaks	765.5	265.9	3,637	134.1	40.4	546
No. red and swamp red oaks	313.9	91.6	1,229	58.6	15.5	207
Ash	430.0	194.8	2,745	150.5	62.5	871
Hard maple	9.2	4.8	70	--	0.3	5
Yellow birch	4.2	0.9	11	--	--	--
Black walnut	16.1	5.1	66	--	--	--
Total	5,009.1	1,664.0	22,571	1,227.0	385.5	5,177
Other hardwoods:						
Tupelo and blackgum	2,967.5	960.7	12,811	1,043.2	348.5	4,645
Cottonwood	84.5	24.8	331	27.0	5.8	72
Soft maple	695.8	264.3	3,637	149.4	61.3	853
Other white oaks	645.4	199.7	2,680	135.7	41.7	557
Other red oaks	2,240.5	749.6	10,246	736.0	241.8	3,296
Hickory	669.3	203.5	2,738	170.3	48.1	643
Beech	99.5	27.4	356	9.3	1.9	24
Dogwood, holly, persimmon	22.9	39.0	609	5.1	8.6	130
Other hardwoods	707.7	283.4	3,918	198.2	66.8	915
Total	8,133.1	2,752.4	37,326	2,474.2	824.5	11,135
Total hardwoods	13,142.2	4,416.4	59,897	3,701.2	1,210.0	16,312
All species	28,530.4	8,936.1	121,117	7,548.6	2,250.9	30,008

1/ International 1/4-inch rule.

2/ Excludes bark.

3/ Sound wood and bark.

4/ Includes 7.5 million board-feet of hemlock.

5/ Includes 1.3 million cubic feet of hemlock.

6/ Includes 14,000 cords of hemlock.

Table 12.--Net volume of sawtimber and growing stock on commercial forest land by species and Survey Unit, South Carolina, 1958 (continued)

Species	NORTHERN COASTAL PLAIN			PIEDMONT		
	Sawtimber	Growing stock		Sawtimber	Growing stock	
	Million bd.-ft.1/	Million cu. ft.2/	Thousand cords3/	Million bd.-ft.1/	Million cu. ft.2/	Thousand cords3/
Yellow pine:						
Longleaf pine	914.1	294.2	4,095	7.1	1.2	14
Slash pine	21.6	6.8	92	--	--	--
Loblolly pine	4,661.5	1,183.0	15,743	2,116.9	700.5	9,744
Shortleaf pine	211.3	66.8	940	1,743.5	709.8	10,246
Pond pine	670.1	209.5	2,911	--	--	--
Virginia pine	--	0.3	5	83.0	54.2	791
Other yellow pine	--	--	--	13.3	3.9	53
Total	6,478.6	1,760.6	23,786	3,963.8	1,469.6	20,848
Other softwoods:						
White pine	--	--	--	4/151.0	5/25.8	6/284
Cypress	871.5	194.6	2,241	--	--	--
Redcedar	22.4	6.9	88	53.5	21.3	277
Total	893.9	201.5	2,329	204.5	47.1	561
Total softwoods	7,372.5	1,962.1	26,115	4,168.3	1,516.7	21,409
Preferred hardwoods:						
Sweetgum	1,305.4	411.9	5,525	589.1	225.5	3,126
Yellow-poplar	201.0	58.0	779	490.9	138.7	1,835
White and swamp chestnut oaks	229.9	66.0	887	401.5	159.5	2,204
No. red and swamp red oaks	160.7	41.3	542	94.6	34.8	480
Ash	201.2	80.9	1,124	78.3	51.4	750
Hard maple	--	--	--	9.2	4.5	65
Yellow birch	--	--	--	4.2	0.9	11
Black walnut	2.1	0.5	6	14.0	4.6	60
Total	2,100.3	658.6	8,863	1,681.8	619.9	8,531
Other hardwoods:						
Tupelo and blackgum	1,384.4	592.3	7,884	39.9	19.9	282
Cottonwood	25.1	11.4	164	32.4	7.6	95
Soft maple	430.5	157.3	2,157	115.9	45.7	627
Other white oaks	261.7	68.9	912	248.0	89.1	1,211
Other red oaks	1,109.0	326.9	4,390	395.5	180.9	2,560
Hickory	222.7	61.6	818	276.3	93.8	1,277
Beech	20.4	4.9	63	69.8	20.6	269
Dogwood, holly, persimmon	14.9	19.0	293	2.9	11.4	186
Other hardwoods	295.2	102.5	1,403	214.3	114.1	1,600
Total	4,263.9	1,344.8	18,084	1,395.0	583.1	8,107
Total hardwoods	6,364.2	2,003.4	26,947	3,076.8	1,203.0	16,638
All species	13,736.7	3,965.5	53,062	7,245.1	2,719.7	38,047

1/ International 1/4-inch rule.

2/ Excludes bark.

3/ Sound wood and bark.

4/ Includes 7.5 million board-feet of hemlock.

5/ Includes 1.3 million cubic feet of hemlock.

6/ Includes 14,000 cords of hemlock.

Table 13.--Net volume of timber on commercial forest land by species group, class of material, and Survey Unit, South Carolina, 1958

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
			STATE			
Sawtimber trees:						
Saw-log portion	4,529.5	56,775	2,502.8	31,538	2,026.7	25,237
Upper stem	1,630.8	21,192	772.4	10,008	858.4	11,184
Total	6,160.3	77,967	3,275.2	41,546	2,885.1	36,421
Poletimber trees	2,775.8	43,150	1,244.5	19,674	1,531.3	23,476
Total growing stock	8,936.1	121,117	4,519.7	61,220	4,416.4	59,897
Cull trees:						
Sound culls:						
Sawtimber-size trees	765.2	9,619	131.2	1,668	634.0	7,951
Poletimber-size trees	396.7	6,113	31.4	498	365.3	5,615
Total	1,161.9	15,732	162.6	2,166	999.3	13,566
Rotten culls	51.9	749	4.1	58	47.8	691
Total cull trees	1,213.8	16,481	166.7	2,224	1,047.1	14,257
Hardwood limbs	360.8	4,458	--	--	360.8	4,458
Salvable dead trees	2.7	36	1.5	20	1.2	16
All timber	10,513.4	142,092	4,687.9	63,464	5,825.5	78,628
			SOUTHERN COASTAL PLAIN			
Sawtimber trees:						
Saw-log portion	1,187.3	14,718	625.3	7,737	562.0	6,981
Upper stem	441.4	5,815	194.3	2,584	247.1	3,231
Total	1,628.7	20,533	819.6	10,321	809.1	10,212
Poletimber trees	622.2	9,475	221.3	3,375	400.9	6,100
Total growing stock	2,250.9	30,008	1,040.9	13,696	1,210.0	16,312
Cull trees:						
Sound culls:						
Sawtimber-size trees	234.5	2,928	32.2	405	202.3	2,523
Poletimber-size trees	112.7	1,709	4.8	71	107.9	1,638
Total	347.2	4,637	37.0	476	310.2	4,161
Rotten culls	9.7	136	0.4	6	9.3	130
Total cull trees	356.9	4,773	37.4	482	319.5	4,291
Hardwood limbs	106.8	1,332	--	--	106.8	1,332
Salvable dead trees	0.5	6	0.3	4	0.2	2
All timber	2,715.1	36,119	1,078.6	14,182	1,636.5	21,937

Table 13.--Net volume of timber on commercial forest land by species group, class of material, and Survey Unit, South Carolina, 1958 (continued)

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
NORTHERN COASTAL PLAIN						
Sawtimber trees:						
Saw-log portion	2,150.4	26,906	1,187.6	14,917	962.8	11,989
Upper stem	776.7	9,968	362.2	4,609	414.5	5,359
Total	2,927.1	36,874	1,549.8	19,526	1,377.3	17,348
Poletimber trees	1,038.4	16,188	412.3	6,589	626.1	9,599
Total growing stock	3,965.5	53,062	1,962.1	26,115	2,003.4	26,947
Cull trees:						
Sound culls:						
Sawtimber-size trees	360.8	4,516	57.0	704	303.8	3,812
Poletimber-size trees	149.8	2,309	8.4	134	141.4	2,175
Total	510.6	6,825	65.4	838	445.2	5,987
Rotten culls	20.6	275	1.7	20	18.9	255
Total cull trees	531.2	7,100	67.1	858	464.1	6,242
Hardwood limbs	192.9	2,367	--	--	192.9	2,367
Salvable dead trees	0.9	13	0.4	5	0.5	8
All timber	4,690.5	62,542	2,029.6	26,978	2,660.9	35,564
PIEDMONT						
Sawtimber trees:						
Saw-log portion	1,191.8	15,151	689.9	8,884	501.9	6,267
Upper stem	412.7	5,409	215.9	2,815	196.8	2,594
Total	1,604.5	20,560	905.8	11,699	698.7	8,861
Poletimber trees	1,115.2	17,487	610.9	9,710	504.3	7,777
Total growing stock	2,719.7	38,047	1,516.7	21,409	1,203.0	16,638
Cull trees:						
Sound culls:						
Sawtimber-size trees	169.9	2,175	42.0	559	127.9	1,616
Poletimber-size trees	134.2	2,095	18.2	293	116.0	1,802
Total	304.1	4,270	60.2	852	243.9	3,418
Rotten culls	21.6	338	2.0	32	19.6	306
Total cull trees	325.7	4,608	62.2	884	263.5	3,724
Hardwood limbs	61.1	759	--	--	61.1	759
Salvable dead trees	1.3	17	0.8	11	0.5	6
All timber	3,107.8	43,431	1,579.7	22,304	1,528.1	21,127

Table 14.--Net volume of sawtimber on commercial forest land by diameter class and species, South Carolina, 1958

(In million board feet)

Species	All classes	Diameter class (In inches)				
		10	12	14	16-18	20+
Yellow pine:						
Longleaf pine	1,586.8	538.1	443.0	295.7	280.6	29.4
Slash pine	214.3	57.9	44.1	46.5	59.5	6.3
Loblolly pine	8,645.5	1,309.3	1,516.0	1,536.7	2,586.9	1,696.6
Shortleaf pine	2,085.6	778.4	567.4	356.6	297.9	85.3
Pond pine	980.7	224.7	253.7	230.4	203.2	68.7
Virginia pine	83.0	21.9	29.0	12.9	14.4	4.8
Other yellow pine	64.4	10.6	11.5	3.5	18.1	20.7
Total	13,660.3	2,940.9	2,864.7	2,482.3	3,460.6	1,911.8
Other softwoods:						
White pine	151.0	8.1	11.2	4.8	50.0	76.9
Cypress	1,501.0	190.4	312.0	284.6	402.3	311.7
Redcedar	75.9	29.0	18.7	6.5	15.0	6.7
Total	1,727.9	227.5	341.9	295.9	467.3	395.3
Total softwoods	15,388.2	3,168.4	3,206.6	2,778.2	3,927.9	2,307.1
Preferred hardwoods:						
Sweetgum	2,624.7	--	572.7	565.4	806.8	679.8
Yellow-poplar	845.5	--	176.5	163.4	283.4	222.2
White and swamp chestnut oaks	765.5	--	203.3	154.4	202.3	205.5
No. red and swamp red oaks	313.9	--	50.6	60.8	71.5	131.0
Ash	430.0	--	137.0	105.1	106.5	81.4
Hard maple	9.2	--	5.8	3.4	--	--
Yellow birch	4.2	--	--	--	--	4.2
Black walnut	16.1	--	2.1	--	14.0	--
Total	5,009.1	--	1,148.0	1,052.5	1,484.5	1,324.1
Other hardwoods:						
Tupelo and blackgum	2,967.5	--	595.8	737.8	939.8	694.1
Cottonwood	84.5	--	10.9	21.8	16.1	35.7
Soft maple	695.8	--	175.5	169.6	208.3	142.4
Other white oaks	645.4	--	123.4	99.8	193.8	228.4
Other red oaks	2,240.5	--	387.4	346.3	617.2	889.6
Hickory	669.3	--	130.1	107.2	196.2	235.8
Beech	99.5	--	10.0	20.2	24.4	44.9
Dogwood, holly, persimmon	22.9	--	6.4	12.0	4.5	--
Other hardwoods	707.7	--	149.6	134.5	227.9	195.7
Total	8,133.1	--	1,589.1	1,649.2	2,428.2	2,466.6
Total hardwoods	13,142.2	--	2,737.1	2,701.7	3,912.7	3,790.7
All species	28,530.4	3,168.4	5,943.7	5,479.9	7,840.6	6,097.8

Table 15.--Net volume of growing stock on commercial forest land by diameter class and species, South Carolina, 1958

Species	All classes		Diameter class (In inches)					
			6		8		10	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Yellow pine:								
Longleaf pine	510.3	7,045	48.1	820	99.6	1,497	122.0	1,651
Slash pine	69.7	965	11.1	186	10.6	153	13.2	181
Loblolly pine	2,348.3	31,581	254.9	4,374	293.8	4,403	341.0	4,595
Shortleaf pine	814.5	11,699	162.4	2,767	191.9	2,850	186.8	2,568
Pond pine	302.8	4,179	34.5	592	52.6	789	59.0	800
Virginia pine	54.5	796	15.4	257	18.1	264	6.4	89
Other yellow pine	16.5	215	1.6	26	1.8	26	2.6	35
Total	4,116.6	56,480	528.0	9,022	668.4	9,982	731.0	9,919
Other softwoods:								
White pine	25.8	284	0.2	3	--	--	2.1	26
Cypress	349.1	4,091	7.2	110	28.3	381	52.5	644
Redcedar	28.2	365	6.3	95	6.1	81	6.8	85
Total	403.1	4,740	13.7	208	34.4	462	61.4	755
Total softwoods	4,519.7	61,220	541.7	9,230	702.8	10,444	792.4	10,674
Preferred hardwoods:								
Sweetgum	860.8	11,625	64.6	1,152	104.4	1,593	122.2	1,691
Yellow-poplar	240.1	3,188	11.4	208	21.3	325	25.9	358
White and swamp chestnut oaks	265.9	3,637	25.5	457	33.3	506	40.5	557
No. red and swamp red oaks	91.6	1,229	6.2	108	11.2	169	8.5	120
Ash	194.8	2,745	27.3	481	34.9	533	35.2	494
Hard maple	4.8	70	1.1	21	--	--	1.3	18
Yellow birch	0.9	11	--	--	--	--	--	--
Black walnut	5.1	66	0.5	8	--	--	0.8	11
Total	1,664.0	22,571	136.6	2,435	205.1	3,126	234.4	3,249
Other hardwoods:								
Tupelo and blackgum	960.7	12,811	31.0	572	91.4	1,391	151.1	2,134
Cottonwood	24.8	331	1.6	29	2.3	36	2.1	30
Soft maple	264.3	3,637	28.1	494	38.7	586	40.8	571
Other white oaks	199.7	2,680	18.1	319	20.4	309	24.7	344
Other red oaks	749.6	10,246	89.4	1,579	92.9	1,416	102.6	1,428
Hickory	203.5	2,738	20.3	358	18.9	292	22.0	308
Beech	27.4	356	1.2	21	--	--	3.7	52
Dogwood, holly, persimmon	39.0	609	16.1	280	10.9	168	6.6	91
Other hardwoods	283.4	3,918	31.2	552	45.7	702	43.4	604
Total	2,752.4	37,326	237.0	4,204	321.2	4,900	397.0	5,562
Total hardwoods	4,416.4	59,897	373.6	6,639	526.3	8,026	631.4	8,811
All species	8,936.1	121,117	915.3	15,869	1,229.1	18,470	1,423.8	19,485

Table 15.--Net volume of growing stock on commercial forest land by diameter class and species, South Carolina, 1958 (continued)

Species	Diameter class (In inches)							
	12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Yellow pine:								
Longleaf pine	110.9	1,469	66.0	835	58.4	712	5.3	61
Slash pine	11.0	145	10.4	134	12.2	152	1.2	14
Loblolly pine	345.1	4,502	320.4	4,101	489.8	6,034	303.3	3,572
Shortleaf pine	127.4	1,687	73.2	932	57.5	715	15.3	180
Pond pine	58.2	764	47.9	619	38.3	470	12.3	145
Virginia pine	7.3	96	3.1	39	3.2	39	1.0	12
Other yellow pine	2.6	34	0.7	9	3.4	42	3.8	43
Total	662.5	8,697	521.7	6,669	662.8	8,164	342.2	4,027
Other softwoods:								
White pine	2.4	29	0.9	10	8.4	92	11.8	124
Cypress	71.4	850	59.1	681	78.8	886	51.8	539
Redcedar	3.9	46	1.2	14	2.8	32	1.1	12
Total	77.7	925	61.2	705	90.0	1,010	64.7	675
Total softwoods	740.2	9,622	582.9	7,374	752.8	9,174	406.9	4,702
Preferred hardwoods:								
Sweetgum	136.0	1,806	129.6	1,662	173.7	2,145	130.3	1,576
Yellow-poplar	42.1	562	37.3	481	59.7	743	42.4	511
White and swamp chestnut oaks	46.9	627	35.2	453	43.6	541	40.9	496
No. red and swamp red oaks	11.4	153	13.8	180	15.2	191	25.3	308
Ash	32.9	430	24.7	317	23.2	289	16.6	201
Hard maple	1.5	20	0.9	11	--	--	--	--
Yellow birch	--	--	--	--	--	--	0.9	11
Black walnut	0.5	6	--	--	3.3	41	--	--
Total	271.3	3,604	241.5	3,104	318.7	3,950	256.4	3,103
Other hardwoods:								
Tupelo and blackgum	162.9	2,118	190.7	2,484	199.4	2,495	134.2	1,617
Cottonwood	2.6	34	5.3	69	3.5	44	7.4	89
Soft maple	42.1	545	39.6	517	45.2	565	29.8	359
Other white oaks	28.3	374	22.9	291	41.3	512	44.0	531
Other red oaks	85.7	1,148	77.9	1,000	129.1	1,593	172.0	2,082
Hickory	31.0	412	24.2	310	41.4	511	45.7	547
Beech	2.5	34	4.9	65	5.6	69	9.5	115
Dogwood, holly, persimmon	1.5	19	2.9	39	1.0	12	--	--
Other hardwoods	39.0	509	32.6	420	51.4	643	40.1	488
Total	395.6	5,193	401.0	5,195	517.9	6,444	482.7	5,828
Total hardwoods	666.9	8,797	642.5	8,299	836.6	10,394	739.1	8,931
All species	1,407.1	18,419	1,225.4	15,673	1,589.4	19,568	1,146.0	13,633

Table 16.--Net volume of timber on commercial forest land by diameter class, species group, class of material, and Survey Unit, South Carolina, 1958

Species group and class of material	All classes		Diameter class (In inches)					
			6		8		10	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
			STATE					
Growing stock:								
Softwood	4,519.7	61,820	541.7	9,230	702.8	10,444	792.4	10,674
Hardwood	4,416.4	59,297	373.6	6,639	526.3	8,026	631.4	8,811
Total	8,936.1	121,117	915.3	15,869	1,229.1	18,470	1,423.8	19,485
Sound culls:								
Softwood	162.6	2,166	12.3	213	19.1	285	41.4	571
Hardwood	999.3	13,566	82.6	1,482	135.4	2,066	147.3	2,067
Total	1,161.9	15,732	94.9	1,695	154.5	2,351	188.7	2,638
Rotten culls	51.9	749	12.3	217	13.6	208	5.7	82
Hardwood limbs	360.8	4,458	--	--	--	--	--	--
All timber	10,510.7	142,056	1,022.5	17,781	1,397.2	21,029	1,618.2	22,205
			SOUTHERN COASTAL PLAIN					
Growing stock:								
Softwood	1,040.9	13,696	74.9	1,238	146.4	2,137	179.8	2,418
Hardwood	1,210.0	16,312	86.4	1,533	145.8	2,203	168.7	2,364
Total	2,250.9	30,008	161.3	2,771	292.2	4,340	348.5	4,782
Sound culls:								
Softwood	37.0	476	0.9	14	3.9	57	9.5	127
Hardwood	310.2	4,161	18.4	348	41.4	616	48.1	674
Total	347.2	4,637	19.3	362	45.3	673	57.6	801
Rotten culls	9.7	136	1.7	33	1.2	20	1.2	18
Hardwood limbs	106.8	1,332	--	--	--	--	--	--
All timber	2,714.6	36,113	182.3	3,166	338.7	5,033	407.3	5,601

Table 16.--Net volume of timber on commercial forest land by diameter class, species group, class of material, and Survey Unit, South Carolina, 1958 (continued)

Species group and class of material	Diameter class (In inches)							
	12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
STATE								
Growing stock:								
Softwood	740.2	9,622	582.9	7,374	752.8	9,174	406.9	4,702
Hardwood	666.9	8,797	642.5	8,299	836.6	10,394	739.1	8,931
Total	1,407.1	18,419	1,225.4	15,673	1,589.4	19,568	1,146.0	13,633
Sound culls:								
Softwood	30.2	399	16.8	206	24.4	294	18.4	198
Hardwood	145.2	1,902	121.9	1,570	169.8	2,091	197.1	2,388
Total	175.4	2,301	138.7	1,776	194.2	2,385	215.5	2,586
Rotten culls	2.8	34	2.5	31	5.4	68	9.6	109
Hardwood limbs	36.7	473	27.3	323	93.7	1,249	203.1	2,413
All timber	1,622.0	21,227	1,393.9	17,803	1,882.7	23,270	1,574.2	18,741
SOUTHERN COASTAL PLAIN								
Growing stock:								
Softwood	178.1	2,284	160.4	1,998	203.8	2,495	97.5	1,126
Hardwood	189.1	2,507	188.7	2,435	232.0	2,871	199.3	2,399
Total	367.2	4,791	349.1	4,433	435.8	5,366	296.8	3,525
Sound culls:								
Softwood	8.4	107	5.5	67	6.9	83	1.9	21
Hardwood	41.7	548	36.0	461	60.6	744	64.0	770
Total	50.1	655	41.5	528	67.5	827	65.9	791
Rotten culls	0.9	12	0.6	7	1.4	17	2.7	29
Hardwood limbs	13.5	182	8.0	100	27.9	373	57.4	677
All timber	431.7	5,640	399.2	5,068	532.6	6,583	422.8	5,022

Table 16.--Net volume of timber on commercial forest land by diameter class, species group, class of material, and Survey Unit, South Carolina, 1958 (continued)

Species group and class of material	All classes		Diameter class (In inches) 6		8		10	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
NORTHERN COASTAL PLAIN								
Growing stock:								
Softwood	1,962.1	26,115	169.1	2,934	243.2	3,655	302.6	4,036
Hardwood	2,003.4	26,947	139.4	2,489	209.9	3,217	276.8	3,893
Total	3,965.5	53,062	308.5	5,423	453.1	6,872	579.4	7,929
Sound culls:								
Softwood	65.4	838	2.9	51	5.5	83	16.7	229
Hardwood	445.2	5,987	28.3	503	54.4	844	58.7	828
Total	510.6	6,825	31.2	554	59.9	927	75.4	1,057
Rotten culls	20.6	275	2.4	40	3.7	58	2.5	35
Hardwood limbs	192.9	2,367	--	--	--	--	--	--
All timber	4,689.6	62,529	342.1	6,017	516.7	7,857	657.3	9,021
PIEDMONT								
Growing stock:								
Softwood	1,516.7	21,409	297.7	5,058	313.2	4,652	310.0	4,220
Hardwood	1,203.0	16,638	147.8	2,617	170.6	2,606	185.9	2,554
Total	2,719.7	38,047	445.5	7,675	483.8	7,258	495.9	6,774
Sound culls:								
Softwood	60.2	852	8.5	148	9.7	145	15.2	215
Hardwood	243.9	3,418	35.9	631	39.6	606	40.5	565
Total	304.1	4,270	44.4	779	49.3	751	55.7	780
Rotten culls	21.6	338	8.2	144	8.7	130	2.0	29
Hardwood limbs	61.1	759	--	--	--	--	--	--
All timber	3,106.5	43,414	498.1	8,598	541.8	8,139	553.6	7,583

Table 16.--Net volume of timber on commercial forest land by diameter class, species group, class of material, and Survey Unit, South Carolina, 1958 (continued)

Species group and class of material	Diameter class (In inches) 12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
NORTHERN COASTAL PLAIN								
Growing stock:								
Softwood	340.7	4,452	276.1	3,525	402.7	4,877	227.7	2,636
Hardwood	282.7	3,689	301.2	3,906	399.1	4,984	394.3	4,769
Total	623.4	8,141	577.3	7,431	801.8	9,861	622.0	7,405
Sound culls:								
Softwood	8.6	115	8.9	109	11.0	130	11.8	121
Hardwood	65.8	858	57.1	739	80.3	991	100.6	1,224
Total	74.4	973	66.0	848	91.3	1,121	112.4	1,345
Rotten culls	1.2	14	1.5	19	3.3	41	6.0	68
Hardwood limbs	20.1	234	12.9	146	45.7	632	114.2	1,355
All timber	719.1	9,362	657.7	8,444	942.1	11,655	854.6	10,173
PIEDMONT								
Growing stock:								
Softwood	221.4	2,886	146.4	1,851	146.3	1,802	81.7	940
Hardwood	195.1	2,601	152.6	1,958	205.5	2,539	145.5	1,763
Total	416.5	5,487	299.0	3,809	351.8	4,341	227.2	2,703
Sound culls:								
Softwood	13.2	177	2.4	30	6.5	81	4.7	56
Hardwood	37.7	496	28.8	370	28.9	356	32.5	394
Total	50.9	673	31.2	400	35.4	437	37.2	450
Rotten culls	0.7	8	0.4	5	0.7	10	0.9	12
Hardwood limbs	3.1	57	6.4	77	20.1	244	31.5	381
All timber	471.2	6,225	337.0	4,291	408.0	5,032	296.8	3,546

Table 17.--Net volume of sawtimber on commercial forest land by species and log grade, South Carolina, 1958

(In million board feet)

Species	All grades	Log grade			
		1	2	3	4
Softwoods:					
Yellow pine	13,660.3	323.6	3,566.6	6,103.7	3,666.4
White pine	151.0	6.7	3.8	113.4	27.1
Cypress	1,501.0	119.7	920.8	367.7	92.8
Other softwoods	75.9	--	--	69.9	6.0
Total	15,388.2	450.0	4,491.2	6,654.7	3,792.3
Hardwoods:					
Preferred white and red oaks[1]	1,079.4	211.6	123.0	439.5	305.3
Other white and red oaks	2,885.9	181.4	369.8	625.1	1,709.6
Hickory	669.3	59.5	122.8	213.7	273.3
Yellow birch	4.2	0.8	1.3	1.3	0.8
Hard maple	9.2	--	0.6	7.0	1.6
Sweetgum	2,624.7	237.5	572.7	845.4	969.1
Tupelo and blackgum	2,967.5	532.5	665.1	1,177.8	592.1
Ash	430.0	--	125.7	188.2	116.1
Yellow-poplar	845.5	28.5	121.2	244.9	450.9
Black walnut	16.1	--	8.7	7.4	--
Other hardwoods	1,610.4	117.3	351.4	647.2	494.5
Total	13,142.2	1,369.1	2,462.3	4,397.5	4,913.3
All species	28,530.4	1,819.1	6,953.5	11,052.2	8,705.6

[1] Includes Q. alba, Q. michauxii, Q. rubra, Q. falcata var. pagodaefolia, and Q. shumardii.

Table 18.--Net volume of salvable dead trees on commercial forest land by species group, South Carolina, 1958

Species group	Volume	
	Million bd. ft.	Million cu. ft.
Softwood	4.5	1.5
Hardwood	--	1.2
Total	4.5	2.7

Table 19.--Number of growing stock, cull, and salvable dead trees on commercial forest land by species group, diameter class, and Survey Unit, South Carolina, 1958

(In thousand trees)

Tree quality and species group	Total	Diameter class (In inches)				
		2	4	6	8	10
STATE						
Growing stock:						
Softwood	2,277,840	1,149,530	532,362	276,676	147,372	80,596
Hardwood	3,509,851	2,436,742	564,877	220,268	112,079	68,774
Total	5,787,691	3,586,272	1,097,239	496,944	259,451	149,370
Sound culls:						
Softwood	187,260	130,217	28,212	12,301	5,567	6,181
Hardwood	2,040,788	1,620,494	256,179	77,858	34,950	21,017
Total	2,228,048	1,750,711	284,391	90,159	40,517	27,198
Rotten culls:						
Softwood	52,072	46,114	4,131	1,402	297	98
Hardwood	215,011	170,162	26,722	10,016	4,485	1,129
Total	267,083	216,276	30,853	11,418	4,782	1,227
Salvable dead trees	318	--	-	125	95	46
All trees	8,283,140	5,553,259	1,412,483	598,646	304,845	177,841
SOUTHERN COASTAL PLAIN						
Growing stock:						
Softwood	342,825	152,864	80,288	39,603	29,328	17,723
Hardwood	798,011	542,779	121,542	53,860	31,062	18,347
Total	1,140,836	695,643	201,830	93,463	60,390	36,070
Sound culls:						
Softwood	13,556	6,659	2,539	855	975	1,295
Hardwood	520,546	406,260	69,486	18,371	10,326	6,757
Total	534,102	412,919	72,025	19,226	11,301	8,052
Rotten culls:						
Softwood	5,980	5,122	706	149	--	--
Hardwood	49,882	41,711	5,006	1,538	607	311
Total	55,862	46,833	5,712	1,687	607	311
Salvable dead trees	70	--	--	44	11	3
All trees	1,730,870	1,155,395	279,567	114,420	72,309	44,436

Table 19.--Number of growing stock, cull, and salvable dead trees on commercial forest land by species group, diameter class, and Survey Unit, South Carolina, 1958 (continued)

(In thousand trees)

Tree quality and species group	Diameter class (In inches)					
	12	14	16	18	20	22+
STATE						
Growing stock:						
Softwood	44,432	23,055	12,679	6,166	2,628	2,344
Hardwood	44,145	28,188	15,602	8,579	4,867	5,730
Total	88,577	51,243	28,281	14,745	7,495	8,074
Sound culls:						
Softwood	2,763	917	629	229	135	109
Hardwood	12,942	7,125	4,093	2,618	1,420	2,092
Total	15,705	8,042	4,722	2,847	1,555	2,201
Rotten culls:						
Softwood	--	--	20	--	--	10
Hardwood	943	501	407	231	121	294
Total	943	501	427	231	121	304
Salvable dead trees	13	18	8	8	3	2
All trees	105,238	59,804	33,438	17,831	9,174	10,581
SOUTHERN COASTAL PLAIN						
Growing stock:						
Softwood	10,413	6,316	3,407	1,717	628	538
Hardwood	12,455	8,225	4,738	2,100	1,391	1,512
Total	22,868	14,541	8,145	3,817	2,019	2,050
Sound culls:						
Softwood	681	294	172	58	22	6
Hardwood	3,699	2,066	1,504	905	503	669
Total	4,380	2,360	1,676	963	525	675
Rotten culls:						
Softwood	--	--	--	--	--	3
Hardwood	300	120	119	43	53	74
Total	300	120	119	43	53	77
Salvable dead trees	2	7	2	--	1	--
All trees	27,550	17,028	9,942	4,823	2,598	2,802

Table 19.--Number of growing stock, cull, and salvable dead trees on commercial forest land by species group, diameter class, and Survey Unit, South Carolina, 1958 (continued)

(In thousand trees)

Tree quality and species group	Total	Diameter class (In inches)				
		2	4	6	8	10
NORTHERN COASTAL PLAIN						
Growing stock:						
Softwood	728,544	354,418	165,651	85,818	48,807	30,127
Hardwood	1,546,139	1,094,350	235,984	92,615	44,449	30,028
Total	2,274,683	1,448,768	401,635	178,433	93,256	60,155
Sound culls:						
Softwood	38,660	27,113	3,256	2,932	1,370	2,361
Hardwood	790,804	634,358	92,306	28,253	13,548	8,288
Total	829,464	661,471	95,562	31,185	14,918	10,649
Rotten culls:						
Softwood	7,150	5,859	1,059	107	--	98
Hardwood	59,813	49,129	4,790	2,256	1,869	509
Total	66,963	54,988	5,849	2,363	1,869	607
Salvable dead trees	124	--	--	69	17	21
All trees	3,171,234	2,165,227	503,046	212,050	110,060	71,432
PIEDMONT						
Growing stock:						
Softwood	1,206,471	642,248	286,423	151,255	69,237	32,746
Hardwood	1,165,701	799,613	207,351	73,793	36,568	20,399
Total	2,372,172	1,441,861	493,774	225,048	105,805	53,145
Sound culls:						
Softwood	135,044	96,445	22,417	8,514	3,222	2,525
Hardwood	729,438	579,876	94,387	31,234	11,076	5,972
Total	864,482	676,321	116,804	39,748	14,298	8,497
Rotten culls:						
Softwood	38,942	35,133	2,366	1,146	297	--
Hardwood	105,316	79,322	16,926	6,222	2,009	309
Total	144,258	114,455	19,292	7,368	2,306	309
Salvable dead trees	124	--	--	12	67	22
All trees	3,381,036	2,232,637	629,870	272,176	122,476	61,973

Table 19.--Number of growing stock, cull, and salvable dead trees on commercial forest land by species group, diameter class, and Survey Unit, South Carolina, 1958 (continued)

(In thousand trees)

Tree quality and species group	Diameter class (In inches)					
	12	14	16	18	20	22+
NORTHERN COASTAL PLAIN						
Growing stock:						
Softwood	20,089	10,777	6,638	3,383	1,482	1,354
Hardwood	18,523	13,137	7,114	4,369	2,452	3,118
Total	38,612	23,914	13,752	7,752	3,934	4,472
Sound culls:						
Softwood	715	467	222	125	13	86
Hardwood	5,818	3,306	1,939	1,215	663	1,110
Total	6,533	3,773	2,161	1,340	676	1,196
Rotten culls:						
Softwood	--	--	20	--	--	7
Hardwood	406	302	230	121	32	169
Total	406	302	250	121	32	176
Salvable dead trees	5	3	4	3	1	1
All trees	45,556	27,992	16,167	9,216	4,643	5,845
PIEDMONT						
Growing stock:						
Softwood	13,930	5,962	2,634	1,066	518	452
Hardwood	13,167	6,826	3,750	2,110	1,024	1,100
Total	27,097	12,788	6,384	3,176	1,542	1,552
Sound culls:						
Softwood	1,367	156	235	46	100	17
Hardwood	3,425	1,753	650	498	254	313
Total	4,792	1,909	885	544	354	330
Rotten culls:						
Softwood	--	--	--	--	--	--
Hardwood	237	79	58	67	36	51
Total	237	79	58	67	36	51
Salvable dead trees	6	8	2	5	1	1
All trees	32,132	14,784	7,329	3,792	1,933	1,934

Table 20.--Average net sawtimber volume per acre on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958

(In board-feet)

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
			STATE				
Pine types:							
Softwood	2,117	4,326	1,302	2,074	2,163	1,930	1,962
Hardwood	149	225	49	74	197	138	139
Total	2,266	4,551	1,351	2,148	2,360	2,068	2,101
Oak-pine type:							
Softwood	1,241	2,638	--	--	1,531	1,102	1,129
Hardwood	1,121	2,186	--	--	1,335	1,019	1,037
Total	2,362	4,824	--	--	2,866	2,121	2,166
Hardwood types:							
Softwood	419	1,297	172	139	833	323	418
Hardwood	2,110	1,871	1,755	758	2,815	1,910	2,512
Total	2,529	3,168	1,927	897	3,648	2,233	2,930
All types:							
Softwood	1,289	3,467	796	1,256	1,598	1,081	1,229
Hardwood	1,101	801	739	363	1,298	1,071	1,231
Total	2,390	4,268	1,535	1,619	2,896	2,152	2,460
			SOUTHERN COASTAL PLAIN				
Pine types:							
Softwood	2,037	--	304	5,162	2,408	2,095	2,014
Hardwood	149	--	37	--	241	143	117
Total	2,186	--	341	5,162	2,649	2,238	2,131
Oak-pine type:							
Softwood	1,370	--	--	--	1,997	1,245	1,222
Hardwood	1,220	--	--	--	1,849	1,012	1,351
Total	2,590	--	--	--	3,846	2,257	2,573
Hardwood types:							
Softwood	535	--	168	--	1,210	452	331
Hardwood	2,064	--	2,463	1,426	2,659	1,887	2,137
Total	2,599	--	2,631	1,426	3,869	2,339	2,468
All types:							
Softwood	1,236	--	226	1,882	1,830	1,154	1,249
Hardwood	1,189	--	1,215	906	1,491	1,139	1,060
Total	2,425	--	1,441	2,788	3,321	2,293	2,309

Table 20.--Average net sawtimber volume per acre on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

(In board-feet)

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
NORTHERN COASTAL PLAIN							
Pine types:							
Softwood	2,615	4,118	2,634	1,883	2,182	2,582	2,799
Hardwood	179	238	126	24	240	159	193
Total	2,794	4,356	2,760	1,907	2,422	2,741	2,992
Oak-pine type:							
Softwood	1,659	2,996	--	--	1,723	1,477	1,626
Hardwood	1,264	1,727	--	--	1,244	1,163	1,393
Total	2,923	4,723	--	--	2,967	2,640	3,019
Hardwood types:							
Softwood	561	2,591	287	175	728	424	654
Hardwood	2,518	2,163	267	865	3,202	2,170	3,338
Total	3,079	4,754	554	1,040	3,930	2,594	3,992
All types:							
Softwood	1,577	3,612	1,760	1,120	1,568	1,428	1,571
Hardwood	1,361	885	178	399	1,498	1,232	1,951
Total	2,938	4,497	1,938	1,519	3,066	2,660	3,522
PIEDMONT							
Pine type:							
Softwood	1,684	4,454	1,941	2,342	1,888	1,190	1,372
Hardwood	121	217	--	219	80	115	113
Total	1,805	4,671	1,941	2,561	1,968	1,305	1,485
Oak-pine type:							
Softwood	789	2,275	--	--	644	703	681
Hardwood	932	2,651	--	--	792	903	607
Total	1,721	4,926	--	--	1,436	1,606	1,288
Hardwood types:							
Softwood	99	352	--	--	224	72	101
Hardwood	1,574	1,658	--	--	1,895	1,621	1,454
Total	1,673	2,010	--	--	2,119	1,693	1,555
All types:							
Softwood	1,005	3,369	1,381	1,623	1,337	657	881
Hardwood	742	744	--	152	606	848	607
Total	1,747	4,113	1,381	1,775	1,943	1,505	1,488

Table 21.--Average net volume per acre of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958

Forest type, species group, and class of material	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
							STATE							
Pine types:														
Growing stock:														
Softwood	652.2	9.0	1,196.4	16.1	449.9	6.3	630.7	8.7	678.1	9.4	597.6	8.2	626.2	8.7
Hardwood	65.8	0.9	117.0	1.7	18.6	0.3	36.9	0.5	69.1	1.0	66.8	1.0	54.2	0.8
Total	718.0	9.9	1,313.4	17.8	468.5	6.6	667.6	9.2	747.2	10.4	664.4	9.2	680.4	9.5
Cull timber:														
Softwood	22.4	0.3	19.1	0.3	15.4	0.2	33.3	0.4	16.4	0.2	22.5	0.3	27.7	0.4
Hardwood	22.1	0.3	42.1	0.6	26.9	0.4	14.9	0.2	17.2	0.2	21.5	0.3	20.9	0.3
Total	44.5	0.6	61.2	0.9	42.3	0.6	48.2	0.6	33.6	0.4	44.0	0.6	48.6	0.7
Oak-pine type:														
Growing stock:														
Softwood	317.9	4.2	588.6	7.5	--	--	--	--	386.8	5.1	289.0	3.8	296.3	3.9
Hardwood	[illegible]	5.9	845.4	11.7	--	--	--	--	513.3	7.1	389.8	5.4	395.0	5.5
Total	747.[illegible]	10.1	1,434.0	19.2	--	--	--	--	900.1	12.2	678.8	9.2	691.3	9.4
Cull timber:														
Softwood	7.2	0.1	9.6	0.1	--	--	--	--	19.5	0.3	4.8	0.1	5.0	0.1
Hardwood	94.5	1.3	152.3	2.1	45.9	0.7	--	--	105.1	1.4	86.5	1.2	97.5	1.4
Total	101.7	1.4	161.9	2.2	45.9	0.7	--	--	124.6	1.7	91.3	1.3	102.5	1.5
Hardwood types:														
Growing stock:														
Softwood	100.3	1.2	281.7	3.2	40.0	0.5	37.6	0.5	192.9	2.3	79.0	1.0	102.1	1.2
Hardwood	681.5	9.2	669.2	9.0	552.9	7.5	257.7	3.4	895.3	12.0	631.3	8.5	766.0	10.2
Total	781.8	10.4	950.9	12.2	592.9	8.0	295.3	3.9	1,088.2	14.3	710.3	9.5	868.1	11.4
Cull timber:														
Softwood	6.4	0.1	8.1	0.1	2.7	(1/)	7.3	0.1	6.4	0.1	4.4	0.1	13.0	0.1
Hardwood	156.2	2.1	130.3	1.8	140.6	1.9	60.5	0.9	211.8	2.8	140.1	1.9	187.3	2.5
Total	162.6	2.2	138.4	1.9	143.3	1.9	67.8	1.0	218.2	2.9	144.5	2.0	200.3	2.6
All types:														
Growing stock:														
Softwood	378.7	5.1	926.8	12.3	267.1	3.7	379.9	5.2	466.3	6.3	319.6	4.3	373.1	5.1
Hardwood	370.0	5.0	317.7	4.4	234.7	3.2	130.2	1.8	424.7	5.7	368.1	5.0	388.2	5.2
Total	748.7	10.1	1,244.5	16.7	501.8	6.9	510.1	7.0	891.0	12.0	687.7	9.3	761.3	10.3
Cull timber:														
Softwood	14.0	0.2	15.6	0.2	9.7	0.1	22.3	0.3	12.9	0.2	12.1	0.2	19.4	0.3
Hardwood	87.7	1.2	73.5	1.0	73.7	1.0	34.2	0.5	99.3	1.3	84.6	1.2	98.7	1.3
Total	101.7	1.4	89.1	1.2	83.4	1.1	56.5	0.8	112.2	1.5	96.7	1.4	118.1	1.6
All timber	850.4	11.5	1,333.6	17.9	585.2	8.0	566.6	7.8	1,003.2	13.5	784.4	10.7	879.4	11.9

1/ Less than 0.05 cord per acre.

Table 21.--Average net volume per acre of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

Forest type, species group, and class of material	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
							SOUTHERN COASTAL PLAIN							
Pine types:														
Growing stock:														
Softwood	581.9	7.8	--	--	197.0	2.9	1,469.1	19.7	702.6	9.5	580.5	7.8	582.2	7.8
Hardwood	52.5	0.7	--	--	8.3	0.1	--	--	61.4	0.8	59.7	0.8	36.8	0.5
Total	634.4	8.5	--	--	205.3	3.0	1,469.1	19.7	764.0	10.3	640.2	8.6	619.0	8.3
Cull timber:														
Softwood	18.8	0.2	--	--	6.1	0.1	--	--	20.3	0.3	18.1	0.2	23.5	0.3
Hardwood	22.5	0.3	--	--	27.7	0.3	--	--	13.3	0.2	22.6	0.3	29.6	0.4
Total	41.3	0.5	--	--	33.8	0.4	--	--	33.6	0.5	40.7	0.5	53.1	0.7
Oak-pine type:														
Growing stock:														
Softwood	307.3	3.9	--	--	--	--	--	--	464.2	5.9	283.2	3.6	237.2	2.9
Hardwood	412.0	5.6	--	--	--	--	--	--	559.7	7.6	386.9	5.3	372.9	4.9
Total	719.3	9.5	--	--	--	--	--	--	1,023.9	13.5	670.1	8.9	610.1	7.8
Cull timber:														
Softwood	9.0	0.1	--	--	--	--	--	--	21.8	0.3	6.5	0.1	3.3	(1/)
Hardwood	123.8	1.6	--	--	--	--	--	--	158.2	2.1	105.9	1.4	163.1	2.2
Total	132.8	1.7	--	--	--	--	--	--	180.0	2.4	112.4	1.5	166.4	2.2
Hardwood types:														
Growing stock:														
Softwood	129.5	1.6	--	--	41.6	0.5	51.2	0.8	288.9	3.5	111.0	1.4	75.9	0.9
Hardwood	669.3	9.0	--	--	784.0	10.7	934.2	12.9	859.2	11.5	628.7	8.5	604.6	7.9
Total	798.8	10.6	--	--	825.6	11.2	985.4	13.7	1,148.1	15.0	739.7	9.9	680.5	8.8
Cull timber:														
Softwood	6.8	0.1	--	--	3.9	0.1	--	--	11.5	0.1	5.4	0.1	9.9	0.1
Hardwood	166.8	2.2	--	--	157.8	2.2	78.9	1.0	186.1	2.5	160.1	2.2	184.7	2.4
Total	173.6	2.3	--	--	161.7	2.3	78.9	1.0	197.6	2.6	165.5	2.3	194.6	2.5
All types:														
Growing stock:														
Softwood	334.4	4.4	--	--	113.9	1.6	568.3	7.7	492.7	6.5	307.1	4.0	342.6	4.5
Hardwood	388.7	5.2	--	--	384.9	5.2	593.5	8.2	470.4	6.3	388.2	5.3	301.1	4.0
Total	723.1	9.6	--	--	498.8	6.8	1,161.8	15.9	963.1	12.8	695.3	9.3	643.7	8.5
Cull timber:														
Softwood	12.0	0.2	--	--	4.8	0.1	--	--	16.5	0.2	10.4	0.1	16.1	0.2
Hardwood	102.6	1.4	--	--	89.8	1.2	50.1	0.6	105.9	1.4	102.3	1.4	105.5	1.4
Total	114.6	1.6	--	--	94.6	1.3	50.1	0.6	122.4	1.6	112.7	1.5	121.6	1.6
All timber	837.7	11.2	--	--	593.4	8.1	1,211.9	16.5	1,085.5	14.4	808.0	10.8	765.3	10.1

1/ Less than 0.05 cord per acre.

Table 21.--Average net volume per acre of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

Forest type, species group, and class of material	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
							NORTHERN COASTAL PLAIN							
Pine types:														
Growing stock:														
Softwood	730.0	9.9	1,115.8	14.9	651.6	8.6	585.3	8.1	664.8	9.1	693.4	9.4	804.9	11.0
Hardwood	74.6	1.1	75.5	1.0	60.1	0.9	17.4	0.3	81.0	1.1	75.4	1.1	80.9	1.1
Total	804.6	11.0	1,191.3	15.9	711.7	9.5	602.7	8.4	745.8	10.2	768.8	10.5	885.8	12.1
Cull timber:														
Softwood	20.4	0.3	18.5	0.2	31.8	0.4	46.4	0.6	9.3	0.1	21.2	0.3	23.4	0.3
Hardwood	25.8	0.4	55.2	0.8	55.0	0.8	15.3	0.3	18.7	0.3	22.2	0.3	32.5	0.4
Total	46.2	0.7	73.7	1.0	86.8	1.2	61.7	0.9	28.0	0.4	43.4	0.6	55.9	0.7
Oak-pine type:														
Growing stock:														
Softwood	393.2	5.1	659.1	8.3	--	--	--	--	414.7	5.4	353.5	4.6	389.7	5.1
Hardwood	459.7	6.3	746.1	10.5	--	--	--	--	546.0	7.6	397.3	5.4	461.3	6.2
Total	852.9	11.4	1,405.2	18.8	--	--	--	--	960.7	13.0	750.8	10.0	851.0	11.3
Cull timber:														
Softwood	8.2	0.1	19.1	0.2	--	--	--	--	26.0	0.3	1.4	(1/)	9.3	0.1
Hardwood	94.6	1.3	198.7	2.7	--	--	--	--	100.3	1.4	82.7	1.1	85.1	1.1
Total	102.8	1.4	217.8	2.9	--	--	--	--	126.3	1.7	84.1	1.1	94.4	1.2
Hardwood types:														
Growing stock:														
Softwood	125.1	1.5	575.5	6.6	57.3	0.8	44.1	0.6	156.6	1.8	92.7	1.1	153.2	1.8
Hardwood	764.0	10.2	741.4	9.9	56.1	0.7	243.7	3.2	970.2	12.9	679.0	9.1	958.8	12.7
Total	889.1	11.7	1,316.9	16.5	113.4	1.5	287.8	3.8	1,126.8	14.7	771.7	10.2	1,112.0	14.5
Cull timber:														
Softwood	9.6	0.1	19.1	0.2	--	--	9.3	0.1	2.4	(1/)	5.9	0.1	22.5	0.2
Hardwood	170.9	2.3	126.1	1.8	160.1	2.0	46.8	0.7	247.7	3.3	145.5	2.0	209.7	2.8
Total	180.5	2.4	145.2	2.0	160.1	2.0	56.1	0.8	250.1	3.3	151.4	2.1	232.2	3.0
All types:														
Growing stock:														
Softwood	419.6	5.6	929.0	12.1	430.4	5.7	343.7	4.7	442.8	5.9	369.4	4.9	426.8	5.7
Hardwood	428.4	5.8	319.8	4.3	58.6	0.8	118.5	1.6	471.6	6.3	399.2	5.4	575.2	7.7
Total	848.0	11.4	1,248.8	16.4	489.0	6.5	462.2	6.3	914.4	12.2	768.6	10.3	1,002.0	13.4
Cull timber:														
Softwood	14.4	0.2	18.7	0.2	20.0	0.3	29.8	0.4	7.9	0.1	12.0	0.2	21.8	0.3
Hardwood	99.2	1.3	90.6	1.2	94.1	1.2	29.4	0.4	116.3	1.6	87.9	1.2	130.3	1.7
Total	113.6	1.5	109.3	1.4	114.1	1.5	59.2	0.8	124.2	1.7	99.9	1.4	152.1	2.0
All timber	961.6	12.9	1,358.1	17.8	603.1	8.0	521.4	7.1	1,038.6	13.9	868.5	11.7	1,154.1	15.4

1/ Less than 0.05 cord per acre.

Table 21.--Average net volume per acre of growing stock and cull timber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1958 (continued)

Forest type, species group, and class of material	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
PIEDMONT														
Pine types:														
Growing stock:														
Softwood	619.2	8.8	1,246.3	16.8	734.7	10.3	685.7	9.4	676.7	9.6	517.1	7.5	524.7	7.4
Hardwood	65.2	0.9	142.7	2.1	--	--	93.6	1.4	56.0	0.8	63.4	0.9	43.8	0.6
Total	684.4	9.7	1,389.0	18.9	734.7	10.3	779.3	10.8	732.7	10.4	580.5	8.4	568.5	8.0
Cull timber:														
Softwood	26.5	0.4	19.5	0.3	17.7	0.2	--	--	24.8	0.4	26.6	0.4	32.5	0.5
Hardwood	18.1	0.3	33.9	0.5	--	--	15.0	0.2	18.2	0.3	20.1	0.3	9.2	0.1
Total	44.6	0.7	53.4	0.8	17.7	0.2	15.0	0.2	43.0	0.7	46.7	0.7	41.7	0.6
Oak-pine type:														
Growing stock:														
Softwood	257.1	3.6	517.2	6.6	--	--	--	--	245.4	3.5	238.7	3.3	246.6	3.5
Hardwood	412.7	5.8	945.9	12.9	--	--	--	--	405.4	5.8	385.2	5.4	351.0	5.1
Total	669.8	9.4	1,463.1	19.5	--	--	--	--	650.8	9.3	623.9	8.7	597.6	8.6
Cull timber:														
Softwood	5.3	0.1	--	--	--	--	--	--	7.3	0.1	6.7	0.1	2.3	(1/)
Hardwood	76.6	1.1	105.3	1.6	115.1	1.7	--	--	42.5	0.7	77.8	1.1	78.3	1.2
Total	81.9	1.2	105.3	1.6	115.1	1.7	--	--	49.8	0.8	84.5	1.2	80.6	1.2
Hardwood types:														
Growing stock:														
Softwood	35.6	0.5	67.0	0.8	--	--	--	--	70.0	1.0	30.4	0.4	38.5	0.5
Hardwood	576.0	7.9	616.4	8.4	--	--	104.1	1.5	732.9	10.0	576.7	7.9	565.8	7.8
Total	611.6	8.4	683.4	9.2	--	--	104.1	1.5	802.9	11.0	607.1	8.3	604.3	8.3
Cull timber:														
Softwood	1.4	(1/)	--	--	--	--	--	--	6.8	0.1	1.5	(1/)	--	--
Hardwood	124.6	1.7	133.4	1.8	--	--	123.8	1.8	155.3	2.1	113.7	1.6	153.8	2.1
Total	126.0	1.7	133.4	1.8	--	--	123.8	1.8	162.1	2.2	115.2	1.6	153.8	2.1
All types:														
Growing stock:														
Softwood	365.9	5.2	925.3	12.4	523.0	7.4	475.2	6.5	478.4	6.8	277.5	4.0	335.5	4.7
Hardwood	290.2	4.0	316.3	4.4	--	--	96.8	1.4	262.0	3.6	319.2	4.4	247.9	3.5
Total	656.1	9.2	1,241.6	16.8	523.0	7.4	572.0	7.9	740.4	10.4	596.7	8.4	583.4	8.2
Cull timber:														
Softwood	15.0	0.2	13.5	0.2	12.6	0.2	--	--	18.3	0.3	13.6	0.2	18.7	0.3
Hardwood	63.6	0.9	61.9	0.9	8.1	0.1	48.4	0.7	54.5	0.8	66.7	0.9	64.1	0.9
Total	78.6	1.1	75.4	1.1	20.7	0.3	48.4	0.7	72.8	1.1	80.3	1.1	82.8	1.2
All timber	734.7	10.3	1,317.0	17.9	543.7	7.7	620.4	8.6	813.2	11.5	677.0	9.5	666.2	9.4

1/ Less than 0.05 cord per acre.

Table 22.--Average net volume per acre of growing stock on commercial forest land by stand size, major forest type, stocking, and site quality, South Carolina, 1958

Site quality and stocking	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
	PINE TYPES									
Good site:										
Well stocked	1,092.2	14.9	1,530.4	20.4	616.2	9.4	70.1	0.9	--	--
Medium stocked	619.7	8.4	1,099.7	14.6	441.2	6.5	60.4	0.8	446.1	5.6
Poorly stocked	187.1	2.6	800.0	10.4	232.3	3.4	47.1	0.7	49.8	0.7
Total	922.9	12.6	1,456.7	19.4	539.7	8.2	62.9	0.8	92.9	1.2
Fair site:										
Well stocked	681.6	9.6	1,176.5	15.9	519.1	8.1	94.1	1.3	--	--
Medium stocked	428.6	6.0	1,027.9	13.6	349.9	5.3	75.6	1.0	366.0	5.2
Poorly stocked	113.0	1.6	478.6	6.3	190.6	2.9	37.6	0.6	63.7	0.8
Total	539.4	7.6	1,130.5	15.2	444.1	6.9	74.7	1.0	76.2	1.0
Poor site:										
Well stocked	597.0	8.5	1,171.4	16.2	458.4	7.0	67.9	0.9	--	--
Medium stocked	284.8	4.0	801.4	10.7	367.6	5.5	36.4	0.5	--	--
Poorly stocked	194.0	2.7	581.9	7.8	224.1	3.4	62.3	0.9	50.5	0.7
Total	428.3	6.1	1,025.1	14.1	399.0	6.1	52.9	0.7	50.5	0.7
All sites:										
Well stocked	900.5	12.4	1,413.9	18.9	554.2	8.5	80.0	1.1	--	--
Medium stocked	480.2	6.6	1,045.6	13.9	385.5	5.8	57.4	0.8	421.0	5.4
Poorly stocked	157.5	2.2	635.5	8.4	215.6	3.2	45.2	0.6	56.2	0.8
Total	718.0	9.9	1,334.8	17.8	477.3	7.3	65.6	0.9	77.6	1.0
	OAK-PINE TYPES									
Good site:										
Well stocked	1,017.8	13.7	1,504.7	19.8	586.9	8.7	105.9	1.5	--	--
Medium stocked	898.0	11.9	1,266.1	16.6	635.0	9.2	134.1	1.7	--	--
Poorly stocked	431.9	5.7	886.7	11.5	327.3	4.6	10.2	0.1	891.3	12.7
Total	910.0	12.2	1,377.4	18.1	567.3	8.4	92.0	1.2	891.3	12.7
Fair site:										
Well stocked	635.5	8.9	1,192.3	16.3	512.9	7.6	70.7	1.0	--	--
Medium stocked	404.4	5.9	987.4	13.8	441.9	6.7	58.6	0.8	--	--
Poorly stocked	137.8	2.0	522.7	7.0	292.7	4.7	60.0	0.8	84.0	1.3
Total	467.1	6.7	1,120.7	15.4	458.1	6.9	63.6	0.9	84.0	1.3
Poor site:										
Well stocked	542.2	7.7	1,487.7	20.7	439.3	6.4	163.5	2.3	--	--
Medium stocked	161.3	2.3	--	--	310.1	4.6	65.0	0.8	--	--
Poorly stocked	133.5	2.1	--	--	198.8	3.2	63.0	1.1	71.1	0.8
Total	343.1	4.9	1,487.7	20.7	353.1	5.2	102.7	1.5	71.1	0.8
All sites:										
Well stocked	898.8	12.2	1,456.1	19.3	547.4	8.1	102.6	1.4	--	--
Medium stocked	685.6	9.2	1,233.9	16.2	489.5	7.2	97.1	1.3	--	--
Poorly stocked	303.3	4.1	867.5	11.3	278.7	4.2	32.9	0.4	179.6	2.5
Total	747.2	10.1	1,344.8	17.8	497.1	7.4	84.4	1.1	179.6	2.5

Table 22.--Average net volume per acre of growing stock on commercial forest land by stand size, major forest type, stocking, and site quality, South Carolina, 1958 (continued)

Site quality and stocking	Stand size: All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
HARDWOOD TYPES										
Good site:										
Well stocked	1,805.7	23.5	2,063.3	26.7	638.1	9.6	136.9	1.8	--	--
Medium stocked	1,331.1	17.4	1,515.5	19.6	705.2	10.3	187.4	2.4	--	--
Poorly stocked	821.8	10.7	1,079.4	13.9	400.6	5.6	214.5	2.7	62.0	0.8
Total	1,520.1	19.8	1,774.2	23.0	613.9	9.1	165.3	2.1	62.0	0.8
Fair site:										
Well stocked	710.9	9.8	1,309.9	17.5	519.6	7.7	106.4	1.4	--	--
Medium stocked	586.8	7.9	1,097.1	14.5	464.8	6.8	121.2	1.6	408.0	5.2
Poorly stocked	298.0	4.0	854.6	11.1	405.8	5.9	67.6	0.9	123.2	1.6
Total	566.6	7.7	1,169.4	15.5	482.3	7.1	98.6	1.3	123.7	1.6
Poor site:										
Well stocked	230.3	3.4	--	--	364.3	5.5	117.5	1.5	--	--
Medium stocked	219.4	3.0	--	--	420.5	6.0	115.4	1.5	387.1	5.2
Poorly stocked	49.6	0.7	898.9	12.2	234.1	3.3	30.6	0.4	37.2	0.5
Total	94.0	1.3	898.9	12.2	361.4	5.3	73.7	1.0	39.4	0.5
All sites:										
Well stocked	1,094.6	14.6	1,740.9	22.8	530.0	7.9	110.1	1.5	--	--
Medium stocked	797.0	10.6	1,316.0	17.2	498.0	7.2	125.4	1.6	397.5	5.2
Poorly stocked	291.8	3.9	963.5	12.5	394.2	5.7	61.7	0.8	64.8	0.9
Total	781.8	10.4	1,497.9	19.6	495.4	7.3	98.7	1.3	67.1	0.9
ALL TYPES										
Good site:										
Well stocked	1,258.0	16.8	1,696.5	22.3	614.6	9.3	84.3	1.1	--	--
Medium stocked	959.5	12.7	1,353.2	17.7	533.7	7.8	95.7	1.2	446.1	5.6
Poorly stocked	453.0	6.0	1,009.2	13.1	281.7	4.1	46.8	0.6	77.3	1.1
Total	1,098.0	14.7	1,571.6	20.6	555.4	8.3	80.3	1.1	106.3	1.4
Fair site:										
Well stocked	694.1	9.7	1,243.8	16.7	519.1	7.9	99.5	1.3	--	--
Medium stocked	533.0	7.3	1,080.0	14.3	424.5	6.3	105.6	1.4	383.8	5.2
Poorly stocked	241.7	3.3	807.8	10.5	332.8	4.9	58.5	0.8	104.7	1.4
Total	551.7	7.6	1,154.0	15.4	464.9	7.0	88.9	1.2	108.6	1.4
Poor site:										
Well stocked	544.3	7.8	1,190.7	16.5	444.5	6.7	90.2	1.2	--	--
Medium stocked	259.5	3.7	801.4	10.7	374.5	5.5	63.7	0.8	387.2	5.2
Poorly stocked	87.2	1.2	629.7	8.4	221.8	3.4	42.2	0.6	38.7	0.5
Total	287.3	4.1	1,041.5	14.3	388.0	5.8	64.9	0.9	40.8	0.5
All sites:										
Well stocked	966.5	13.1	1,535.2	20.3	546.5	8.3	93.5	1.2	--	--
Medium stocked	666.2	9.0	1,232.1	16.2	445.2	6.6	93.8	1.2	413.6	5.4
Poorly stocked	250.6	3.4	897.2	11.7	299.9	4.4	53.1	0.7	65.9	0.9
Total	748.7	10.1	1,409.3	18.6	485.5	7.3	82.4	1.1	72.2	1.0

Table 23.--Net annual growth and cut of sawtimber and growing stock on commercial forest land by species, South Carolina, 1957

Species	Sawtimber		Growing stock			
	Net annual growth	Annual cut	Net annual growth	Annual cut	Net annual growth	Annual cut
	Million board feet		Million cubic feet		Thousand cords[1]	
Softwood	1,003.5	1,037.0	280.9	277.4	4,255	3,724
Hardwood:						
Preferred hdwds.:						
Yellow-poplar	57.7	33.7	13.6	7.5	201	93
Sweetgum	104.6	110.4	25.8	26.6	387	337
Oaks	38.4	46.6	15.6	10.9	246	139
Other preferred hdwds.	23.8	26.8	6.2	6.1	95	77
Other hdwds.	248.7	255.1	62.0	64.2	934	827
Total	473.2	472.6	123.2	115.3	1,863	1,473
All species	1,476.7	1,509.6	404.1	392.7	6,118	5,197

[1] Differences in the relationship between growth and timber cut expressed in cubic feet and cords reflect variation in the cubic-foot content of a stacked cord according to the size of the timber. Since the timber making up the growth volume is on the average smaller than the timber cut, a cord of growth contains less wood than a cord of timber cut.

Table 24.--Gross annual growth, mortality, and cut of sawtimber and growing stock on commercial forest land by ownership and species group, South Carolina, 1957

Growth, mortality, and cut by species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
SAWTIMBER (In million board feet)							
Gross annual growth:							
Softwood	1,375.5	127.8	23.7	31.5	211.4	728.5	252.6
Hardwood	695.9	20.8	6.0	8.0	111.6	418.2	131.3
Total	2,071.4	148.6	29.7	39.5	323.0	1,146.7	383.9
Annual mortality:							
Softwood	372.0	47.5	4.9	6.5	65.2	179.1	68.8
Hardwood	222.7	7.6	4.0	1.8	38.5	117.3	53.5
Total	594.7	55.1	8.9	8.3	103.7	296.4	122.3
Annual cut:							
Softwood	1,037.0	42.0	7.0	11.0	165.5	597.7	213.8
Hardwood	472.6	2.2	0.6	--	117.1	240.3	112.4
Total	1,509.6	44.2	7.6	11.0	282.6	838.0	326.2
GROWING STOCK (In million cubic feet)							
Gross annual growth:							
Softwood	379.9	29.0	6.0	7.2	67.3	194.8	75.6
Hardwood	222.2	7.8	2.5	2.4	31.3	136.2	42.0
Total	602.1	36.8	8.5	9.6	98.6	331.0	117.6
Annual mortality:							
Softwood	99.0	11.6	1.5	1.8	17.2	47.9	19.0
Hardwood	99.0	4.2	1.6	0.8	16.0	55.3	21.1
Total	198.0	15.8	3.1	2.6	33.2	103.2	40.1
Annual cut:							
Softwood	277.4	10.5	1.9	3.9	39.6	162.2	59.3
Hardwood	115.3	0.7	0.1	--	29.4	58.7	26.4
Total	392.7	11.2	2.0	3.9	69.0	220.9	85.7
GROWING STOCK (In thousand cords)							
Gross annual growth:							
Softwood	5,573	412	88	107	996	2,849	1,121
Hardwood	3,267	116	35	39	451	2,014	612
Total	8,840	528	123	146	1,447	4,863	1,733
Annual mortality:							
Softwood	1,318	151	22	25	227	638	255
Hardwood	1,404	59	22	10	223	793	297
Total	2,722	210	44	35	450	1,431	552
Annual cut:							
Softwood	3,724	139	26	57	506	2,197	799
Hardwood	1,473	9	2	--	381	750	331
Total	5,197	148	28	57	887	2,947	1,130

Table 25.--Annual mortality of sawtimber and growing stock on commercial forest land by species group and cause of death, South Carolina, 1957

Species group	Cause of death					
	All causes	Fire	Insects	Diseases	Other	Unknown
SAWTIMBER (In million board feet)						
Softwood	372.0	29.5	36.8	17.6	163.5	124.6
Hardwood	222.7	6.7	--	7.7	75.6	132.7
Total	594.7	36.2	36.8	25.3	239.1	257.3
GROWING STOCK (In million cubic feet)						
Softwood	99.0	5.1	8.4	18.3	30.4	36.8
Hardwood	99.0	7.9	--	2.5	28.8	59.8
Total	198.0	13.0	8.4	20.8	59.2	96.6
GROWING STOCK (In thousand cords)						
Softwood	1,318	57	110	261	376	514
Hardwood	1,404	121	--	33	402	848
Total	2,722	178	110	294	778	1,362

Table 26.--Average annual gross growth per acre of sawtimber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1957

(In board feet)

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
STATE							
Pine types:							
Softwood	208	306	144	235	200	209	189
Hardwood	8	5	1	2	7	8	11
Total	216	311	145	237	207	217	200
Oak-pine type:							
Softwood	94	148	--	--	103	93	79
Hardwood	73	147	--	--	137	62	44
Total	167	295	--	--	240	155	123
Hardwood types:							
Softwood	21	55	9	5	31	19	16
Hardwood	109	85	51	81	132	108	107
Total	130	140	60	86	163	127	123
All types:							
Softwood	115	233	84	137	127	107	106
Hardwood	58	38	21	35	67	61	55
Total	173	271	105	172	194	168	161
SOUTHERN COASTAL PLAIN							
Pine types:							
Softwood	194	--	25	(2/)	255	206	136
Hardwood	7	--	1	--	5	9	4
Total	201	--	26	(2/)	260	215	140
Oak-pine type:							
Softwood	104	--	--	--	149	106	53
Hardwood	61	--	--	--	132	47	32
Total	165	--	--	--	281	153	85
Hardwood types:							
Softwood	25	--	11	--	39	26	6
Hardwood	113	--	73	(2/)	119	115	98
Total	138	--	84	(2/)	158	141	104
All types:							
Softwood	102	--	17	(2/)	147	103	75
Hardwood	64	--	36	(2/)	70	68	45
Total	166	--	53	(2/)	217	171	120

Table 26.--Average annual gross growth per acre of sawtimber on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1957 (continued)

(In board feet)

Type and species group	All ownerships	National forest	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
NORTHERN COASTAL PLAIN							
Pine types:							
Softwood	237	335	234	184	180	252	235
Hardwood	9	4	3	(1/)	11	9	12
Total	246	339	237	184	191	261	247
Oak-pine type:							
Softwood	120	144	--	--	106	125	109
Hardwood	87	219	--	--	150	56	76
Total	207	363	--	--	256	181	185
Hardwood types:							
Softwood	26	106	(2/)	6	29	24	27
Hardwood	114	53	(2/)	28	123	115	131
Total	140	159	(2/)	34	152	139	158
All types:							
Softwood	129	256	150	104	114	129	115
Hardwood	65	44	3	13	67	65	80
Total	194	300	153	117	181	194	195
PIEDMONT							
Pine types:							
Softwood	189	288	282	(2/)	179	168	182
Hardwood	8	6	--	(2/)	2	7	14
Total	197	294	282	(2/)	181	175	196
Oak-pine type:							
Softwood	64	151	--	--	37	59	66
Hardwood	69	74	--	--	124	77	23
Total	133	225	--	--	161	136	89
Hardwood types:							
Softwood	8	18	--	--	17	8	7
Hardwood	96	107	--	(2/)	193	94	73
Total	104	125	--	(2/)	210	102	80
All types:							
Softwood	109	217	201	(2/)	123	87	112
Hardwood	47	34	--	(2/)	63	52	35
Total	156	251	201	(2/)	186	139	147

1/ Less than 0.5 board foot per acre.

2/ Excluded because of excessive sampling error.

Table 27.--Average annual gross growth per acre of growing stock on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1957

Type and species group	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
STATE														
Pine types:														
Softwood	58.8	0.9	72.2	1.0	36.8	0.5	53.3	0.8	66.4	1.0	57.2	0.8	56.4	0.8
Hardwood	4.2	0.1	6.4	0.1	0.7	(1/)	1.9	(1/)	3.5	0.1	5.0	0.1	3.0	(1/)
Total	63.0	1.0	78.6	1.1	37.5	0.5	55.2	0.8	69.9	1.1	62.2	0.9	59.4	0.8
Oak-pine type:														
Softwood	22.9	0.3	25.5	0.3	--	--	--	--	30.2	0.4	22.0	0.3	20.6	0.3
Hardwood	25.2	0.4	38.1	0.6	--	--	--	--	26.6	0.4	24.8	0.4	23.2	0.4
Total	48.1	0.7	63.6	0.9	--	--	--	--	56.8	0.8	46.8	0.7	43.8	0.7
Hardwood types:														
Softwood	5.0	0.1	8.1	0.1	1.8	(1/)	2.0	(1/)	6.6	0.1	4.5	0.1	5.8	0.1
Hardwood	32.5	0.5	26.4	0.4	20.8	0.3	22.7	0.4	37.9	0.5	32.3	0.5	32.9	0.5
Total	37.5	0.6	34.5	0.5	22.6	0.3	24.7	0.4	44.5	0.6	36.8	0.6	38.7	0.6
All types:														
Softwood	31.8	0.5	52.9	0.8	21.2	0.3	31.6	0.5	40.3	0.6	28.6	0.4	31.6	0.5
Hardwood	18.6	0.3	14.2	0.2	8.8	0.1	10.7	0.2	18.7	0.3	20.0	0.3	17.6	0.3
Total	50.4	0.8	67.1	1.0	30.0	0.4	42.3	0.7	59.0	0.9	48.6	0.7	49.2	0.8
SOUTHERN COASTAL PLAIN														
Pine types:														
Softwood	49.1	0.7	--	--	29.0	0.5	(2/)	(2/)	66.7	1.0	47.5	0.7	42.8	0.6
Hardwood	2.9	(1/)	--	--	0.2	(1/)	--	--	3.7	0.1	3.4	0.1	1.4	(1/)
Total	52.0	0.7	--	--	29.2	0.5	(2/)	(2/)	70.4	1.1	50.9	0.8	44.2	0.6
Oak-pine type:														
Softwood	24.1	0.3	--	--	--	--	--	--	38.0	0.5	23.9	0.3	10.2	0.1
Hardwood	16.5	0.2	--	--	--	--	--	--	22.6	0.3	16.6	0.2	10.8	0.2
Total	40.6	0.5	--	--	--	--	--	--	60.6	0.8	40.5	0.5	21.0	0.3
Hardwood types:														
Softwood	5.4	0.1	--	--	2.1	(1/)	(2/)	(2/)	9.2	0.1	5.4	0.1	2.5	(1/)
Hardwood	31.7	0.5	--	--	29.9	0.4	(2/)	(2/)	39.2	0.6	30.4	0.4	27.7	0.4
Total	37.1	0.6	--	--	32.0	0.4	(2/)	(2/)	48.4	0.7	35.8	0.5	30.2	0.4
All types:														
Softwood	25.3	0.4	--	--	14.8	0.2	(2/)	(2/)	38.0	0.5	23.2	0.3	23.3	0.3
Hardwood	18.3	0.3	--	--	14.6	0.2	(2/)	(2/)	21.5	0.3	18.8	0.3	13.1	0.2
Total	43.6	0.7	--	--	29.4	0.4	(2/)	(2/)	59.5	0.8	42.0	0.6	36.4	0.5

1/ Less than 0.05 cord per acre.

2/ Excluded because of excessive sampling error.

Table 27.--Average annual gross growth per acre of growing stock on commercial forest land by ownership, major forest type, species group, and Survey Unit, South Carolina, 1957 (continued)

Type and species group	All ownerships		National forest		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
NORTHERN COASTAL PLAIN														
Pine types:														
Softwood	[illegible]	[illegible]	[illegible]	1.2	32.8	0.4	50.1	0.8	61.2	0.9	64.8	0.9	68.9	1.0
Hardwood	5.0	0.1	2.2	(1/)	2.6	(1/)	1.5	(1/)	3.6	0.1	6.7	0.1	3.6	0.1
Total	[illegible]	1.0	85.7	1.2	35.4	0.4	51.6	0.8	64.8	1.0	71.5	1.0	72.5	1.1
Oak-pine type:														
Softwood	28.7	.4	[illegible]	.5	--	--	--	--	23.8	0.3	26.6	0.4	36.6	0.5
Hardwood	27.4	0.4	[illegible]	.7	--	--	--	--	30.5	0.5	26.5	0.4	20.6	0.3
Total	56.1	0.8	79.6	1.2	--	--	--	--	54.3	0.8	53.1	0.8	57.2	0.8
Hardwood types:														
Softwood	[illegible]	0.1	[illegible]	0.2	(2/)	(2/)	1.4	(1/)	5.0	0.1	4.7	0.1	5.6	0.1
Hardwood	[illegible]	0.5	[illegible]	0.4	(2/)	(2/)	19.3	0.3	37.9	0.5	33.4	0.5	39.2	0.6
Total	39.4	0.6	41.0	0.6	(2/)	(2/)	20.7	0.3	42.9	0.6	38.1	0.6	44.8	0.7
All types:														
Softwood	[illegible]	0.5	61.0	0.9	21.2	0.3	28.4	0.4	35.9	0.5	32.0	0.5	32.9	0.5
Hardwood	20.5	0.3	13.4	0.2	1.9	(1/)	9.5	0.1	19.4	0.3	21.5	0.3	23.8	0.3
Total	54.4	0.8	74.4	1.1	23.1	0.3	37.9	0.5	55.3	0.8	53.5	0.8	56.7	0.8
PIEDMONT														
Pine types:														
Softwood	58.8	0.9	65.2	0.9	54.7	0.8	(2/)	(2/)	74.9	1.1	56.5	0.9	54.0	0.8
Hardwood	4.4	0.1	9.0	0.1	--	--	(2/)	(2/)	3.0	(1/)	4.5	0.1	3.3	0.1
Total	63.2	1.0	74.2	1.0	54.7	0.8	(2/)	(2/)	77.9	1.1	61.0	1.0	57.3	0.9
Oak-pine type:														
Softwood	17.1	0.2	16.9	0.2	--	--	--	--	29.2	0.5	17.1	0.2	12.2	0.2
Hardwood	28.5	0.4	30.4	0.4	--	--	--	--	26.2	0.4	28.3	0.4	30.9	0.5
Total	45.6	0.6	47.3	0.6	--	--	--	--	55.4	0.9	45.4	0.6	43.1	0.7
Hardwood types:														
Softwood	4.5	0.1	3.0	(1/)	--	--	--	--	5.5	0.1	3.5	0.1	8.1	0.1
Hardwood	30.9	0.5	26.9	0.4	--	--	(2/)	(2/)	34.6	0.5	33.0	0.5	26.2	0.4
Total	35.4	0.6	29.9	0.4	--	--	(2/)	(2/)	40.1	0.6	36.5	0.6	34.3	0.5
All types:														
Softwood	34.3	0.5	47.4	0.7	38.9	0.6	(2/)	(2/)	52.6	0.8	29.4	0.4	34.6	0.5
Hardwood	16.7	0.3	14.8	0.2	--	--	(2/)	(2/)	13.4	0.2	19.4	0.3	13.7	0.2
Total	51.0	0.8	62.2	0.9	38.9	0.6	(2/)	(2/)	66.0	1.0	48.8	0.7	48.3	0.7

1/ Less than 0.05 cord per acre.

2/ Excluded because of excessive sampling error.

Table 28.--Average annual gross growth per acre of growing stock on commercial forest land by stand size, major forest type, stocking, and site quality, South Carolina, 1957

Site quality and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
PINE TYPES										
Good site:										
Well stocked	94.8	1.4	99.0	1.4	118.1	1.9	18.7	0.3	--	--
Medium stocked	48.2	0.7	60.1	0.8	69.8	1.1	6.2	0.1	43.5	0.6
Poorly stocked	21.4	0.3	50.5	0.7	34.9	0.5	5.7	0.1	9.1	0.1
Total	79.7	1.2	92.7	1.3	99.8	1.6	12.7	0.2	12.8	0.2
Fair site:										
Well stocked	65.4	1.0	71.9	1.0	81.3	1.3	21.2	0.3	--	--
Medium stocked	34.9	0.5	49.2	0.7	45.4	0.7	6.7	0.1	44.7	0.6
Poorly stocked	14.2	0.2	11.4	0.2	23.2	0.4	13.9	0.2	4.6	0.1
Total	51.1	0.8	66.5	0.9	66.7	1.1	16.0	0.2	6.3	0.1
Poor site:										
Well stocked	48.6	0.7	62.6	0.9	53.5	0.8	18.0	0.3	--	--
Medium stocked	19.7	0.3	31.8	0.4	34.3	0.5	3.4	(1/)	--	--
Poorly stocked	15.0	0.2	24.6	0.3	20.9	0.3	12.5	0.2	1.7	(1/)
Total	33.7	0.5	51.8	0.7	43.4	0.7	10.5	0.2	1.7	(1/)
All sites:										
Well stocked	79.8	1.2	89.4	1.3	93.9	1.5	19.6	0.3	--	--
Medium stocked	37.4	0.5	53.9	0.7	51.2	0.8	5.5	0.1	43.9	0.6
Poorly stocked	17.0	0.3	30.7	0.4	27.8	0.4	10.9	0.2	5.6	0.1
Total	63.0	1.0	82.3	1.2	76.8	1.2	13.6	0.2	7.8	0.1
OAK-PINE TYPES										
Good site:										
Well stocked	69.4	1.0	86.2	1.2	66.5	1.0	19.2	0.3	--	--
Medium stocked	46.0	0.6	60.4	0.8	50.2	0.7	7.0	0.1	--	--
Poorly stocked	21.5	0.3	36.7	0.5	26.7	0.4	0.9	(1/)	71.1	1.0
Total	56.9	0.8	74.0	1.0	59.2	0.9	11.3	0.2	71.1	1.0
Fair site:										
Well stocked	35.8	0.6	(2/)	(2/)	81.5	1.3	1.4	(1/)	--	--
Medium stocked	40.8	0.6	(2/)	(2/)	28.1	0.4	3.6	0.1	--	--
Poorly stocked	11.8	0.2	(2/)	(2/)	33.4	0.5	2.0	(1/)	8.2	0.1
Total	33.5	0.5	(2/)	(2/)	51.7	0.8	2.3	(1/)	8.2	0.1
Poor site:										
Well stocked	28.9	0.4	51.9	0.7	22.8	0.3	26.9	0.4	--	--
Medium stocked	29.4	0.5	--	--	17.3	0.3	37.2	0.6	--	--
Poorly stocked	12.1	0.2	--	--	17.8	0.3	11.3	0.2	1.0	(1/)
Total	24.9	0.4	51.9	0.7	20.5	0.3	28.7	0.5	1.0	(1/)
All sites:										
Well stocked	59.1	0.9	74.3	1.1	63.8	1.0	15.0	0.2	--	--
Medium stocked	43.0	0.6	71.7	1.0	34.1	0.5	11.0	0.2	--	--
Poorly stocked	17.3	0.2	36.6	0.5	25.7	0.4	2.3	(1/)	13.6	0.2
Total	48.1	0.7	70.5	1.0	50.6	0.8	10.7	0.2	13.6	0.2

1/ Less than 0.05 cord per acre.

2/ Excluded because of excessive sampling error.

Table 28.--Average annual gross growth per acre of growing stock on commercial forest land by stand size, major forest type, stocking, and site quality, South Carolina, 1957 (continued)

Site quality and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
HARDWOOD TYPES										
Good site:										
Well stocked	74.1	1.0	78.4	1.1	67.9	1.1	10.6	0.2	--	--
Medium stocked	51.5	0.7	54.0	0.7	49.8	0.7	23.6	0.4	--	--
Poorly stocked	31.2	0.4	38.0	0.5	18.3	0.3	47.6	0.8	2.1	(1/)
Total	61.1	0.9	66.0	0.9	53.1	0.8	19.7	0.3	2.1	(1/)
Fair site:										
Well stocked	43.8	0.7	61.5	0.9	48.9	0.8	10.8	0.2	--	--
Medium stocked	31.8	0.5	46.6	0.7	34.4	0.5	12.3	0.2	23.6	0.3
Poorly stocked	15.2	0.2	31.7	0.4	27.3	0.4	6.1	0.1	4.9	0.1
Total	32.8	0.5	52.0	0.7	40.5	0.6	9.8	0.1	5.0	0.1
Poor site:										
Well stocked	16.3	0.3	--	--	30.7	0.5	4.1	0.1	--	--
Medium stocked	12.4	0.2	--	--	23.1	0.3	6.4	0.1	32.7	0.4
Poorly stocked	2.5	(1/)	67.8	1.0	10.4	0.2	0.7	(1/)	1.8	(1/)
Total	5.4	0.1	67.8	1.0	24.0	0.4	3.1	(1/)	2.0	(1/)
All sites:										
Well stocked	54.0	0.8	71.2	1.0	50.9	0.8	10.2	0.1	--	--
Medium stocked	36.8	0.5	50.5	0.7	35.9	0.5	12.3	0.2	28.2	0.4
Poorly stocked	13.3	0.2	35.3	0.5	24.8	0.4	5.6	0.1	2.8	(1/)
Total	37.5	0.6	59.6	0.8	41.5	0.6	9.3	0.1	3.0	(1/)
ALL TYPES										
Good site:										
Well stocked	86.4	1.3	91.0	1.3	104.6	1.6	17.9	0.3	--	--
Medium stocked	49.2	0.7	56.8	0.8	62.2	0.9	8.9	0.1	43.5	0.6
Poorly stocked	24.9	0.4	39.4	0.5	30.2	0.5	6.8	0.1	9.0	0.1
Total	70.9	1.0	79.7	1.1	86.7	1.4	13.1	0.2	11.7	0.2
Fair site:										
Well stocked	53.2	0.8	64.2	0.9	66.0	1.1	14.4	0.2	--	--
Medium stocked	33.2	0.5	50.9	0.7	37.4	0.6	10.3	0.2	35.8	0.5
Poorly stocked	14.8	0.2	29.4	0.4	26.2	0.4	8.1	0.1	5.0	0.1
Total	39.4	0.6	57.0	0.8	52.1	0.8	11.4	0.2	5.5	0.1
Poor site:										
Well stocked	42.6	0.6	62.0	0.9	47.3	0.7	15.2	0.2	--	--
Medium stocked	18.6	0.3	31.8	0.4	30.5	0.5	7.3	0.1	32.7	0.4
Poorly stocked	5.8	0.1	31.1	0.4	18.5	0.3	4.9	0.1	1.8	(1/)
Total	21.7	0.3	52.1	0.8	37.8	0.6	8.9	0.1	2.0	(1/)
All sites:										
Well stocked	69.1	1.0	81.5	1.1	78.5	1.2	15.6	0.2	--	--
Medium stocked	37.7	0.5	53.8	0.7	42.8	0.7	9.3	0.1	38.9	0.5
Poorly stocked	14.8	0.2	34.6	0.5	26.3	0.4	7.3	0.1	3.7	0.1
Total	50.4	0.8	70.9	1.0	62.0	1.0	11.4	0.2	4.4	0.1

1/ Less than 0.05 cord per acre.

Table 29.--Output of timber products from roundwood and plant residues by product and species group, South Carolina, 1957

Product and species group	Standard unit	Output by source		
		Total	From plant residues	From roundwood
		Units	Units	Units
Saw logs:				
Softwood	M bd. ft.[1]	678,300	--	678,300
Hardwood	M bd. ft.[1]	217,100	--	217,100
Total	M bd. ft.[1]	895,400	--	895,400
Veneer logs and bolts:				
Softwood	M bd. ft.[1]	3,500	--	3,500
Hardwood	M bd. ft.[1]	141,000	--	141,000
Total	M bd. ft.[1]	144,500	--	144,500
Cooperage logs and bolts:				
Softwood	M bd. ft.[1]	5,500	--	5,500
Hardwood	M bd. ft.[1]	2,200	--	2,200
Total	M bd. ft.[1]	7,700	--	7,700
Pulpwood:				
Softwood	Std. cords[2]	1,461,400	76,700	1,384,700
Hardwood	Std. cords[2]	281,600	11,300	270,300
Total	Std. cords[2]	1,743,000	88,000	1,655,000
Piling:				
Softwood	M linear ft.	900	--	900
Hardwood	M linear ft.	--	--	--
Total	M linear ft.	900	--	900
Poles:				
Softwood	M pieces	300	--	300
Hardwood	M pieces	--	--	--
Total	M pieces	300	--	300
Hewn ties:				
Softwood	M pieces	100	--	100
Hardwood	M pieces	100	--	100
Total	M pieces	200	--	200
Posts:				
Softwood	M pieces	5,500	--	5,500
Hardwood	M pieces	4,900	--	4,900
Total	M pieces	10,400	--	10,400
Other industrial wood:[3]				
Softwood	M cu. ft.	2,100	--	2,100
Hardwood	M cu. ft.	1,800	--	1,800
Total	M cu. ft.	3,900	--	3,900
Fuelwood:[4]				
Softwood	Std. cords[2]	798,800	159,800	639,000
Hardwood	Std. cords[2]	672,700	134,500	538,200
Total	Std. cords[2]	1,471,500	294,300	1,177,200
All products:				
Softwood	M cu. ft.	305,400	16,900	288,500
Hardwood	M cu. ft.	131,100	9,600	121,500
Total	M cu. ft.	436,500	26,500	410,000

[1] International 1/4-inch rule.
[2] Rough wood basis.
[3] Includes excelsior bolts, shingle bolts, turnery bolts, etc.
[4] Used for domestic heating and cooking and excludes industrial use.

Table 30.--Output of timber products from roundwood by source, product, and species group, South Carolina, 1957

(In thousand cubic feet)

Product and species group	All roundwood	Growing stock				Dead trees	Cull trees and limbs
		Total	Sawtimber trees	Poletimber trees	Material left following logging		
Saw logs:							
Softwood	117,400	110,200	100,600	9,600	--	--	7,200
Hardwood	34,400	33,500	29,700	3,800	--	--	900
Total	151,800	143,700	130,300	13,400	--	--	8,100
Veneer logs and bolts:							
Softwood	600	600	600	--	--	--	--
Hardwood	21,500	20,900	20,900	--	--	--	600
Total	22,100	21,500	21,500	--	--	--	600
Cooperage logs and bolts:							
Softwood	1,000	1,000	1,000	--	--	--	--
Hardwood	300	300	300	--	--	--	--
Total	1,300	1,300	1,300	--	--	--	--
Pulpwood:							
Softwood	117,100	108,300	65,600	28,800	13,900	3,200	5,600
Hardwood	25,900	21,100	14,700	6,400	--	--	4,800
Total	143,000	129,400	80,300	35,200	13,900	3,200	10,400
Piling:							
Softwood	600	600	500	100	--	--	--
Hardwood	--	--	--	--	--	--	--
Total	600	600	500	100	--	--	--
Poles:							
Softwood	3,900	3,900	3,700	200	--	--	--
Hardwood	--	--	--	--	--	--	--
Total	3,900	3,900	3,700	200	--	--	--
Hewn ties:							
Softwood	600	600	600	--	--	--	--
Hardwood	300	300	300	--	--	--	--
Total	900	900	900	--	--	--	--
Posts:							
Softwood	3,600	2,300	400	1,700	200	300	1,000
Hardwood	3,200	2,000	300	1,500	200	300	900
Total	6,800	4,300	700	3,200	400	600	1,900
Other industrial wood:[1]							
Softwood	2,100	1,900	700	1,200	--	100	100
Hardwood	1,800	1,700	900	800	--	100	--
Total	3,900	3,600	1,600	2,000	--	200	100
Fuelwood:							
Softwood	41,600	24,600	--	7,800	16,800	4,300	12,700
Hardwood	34,100	15,000	4,100	6,600	4,300	4,000	15,100
Total	75,700	39,600	4,100	14,400	21,100	8,300	27,800
All products:							
Softwood	288,500	254,000	173,700	49,400	30,900	7,900	26,600
Hardwood	121,500	94,800	71,200	19,100	4,500	4,400	22,300
Total	410,000	348,800	244,900	68,500	35,400	12,300	48,900

[1] Includes excelsior bolts, shingle bolts, turnery bolts, etc.

Table 31.--Timber cut from sawtimber and growing stock by product and species group, South Carolina, 1957

Product	Sawtimber			Growing stock		
	Total	Softwood	Hardwood	Total	Softwood	Hardwood
	Thousand board feet			Thousand cubic feet		
Saw logs	919,400	699,200	220,200	175,400	132,200	43,200
Veneer logs and bolts	157,000	4,000	153,000	30,300	800	29,500
Cooperage logs and bolts	8,600	6,000	2,600	1,700	1,100	600
Pulpwood	361,000	293,100	67,900	130,000	108,300	21,700
Piling	3,000	3,000	--	700	700	--
Poles	20,500	20,500	--	4,500	4,500	--
Hewn ties	6,500	4,100	2,400	1,400	800	600
Posts	4,400	2,300	2,100	4,200	2,200	2,000
Other industrial wood 1/	12,000	4,800	7,200	4,500	2,300	2,200
Fuelwood	17,200	--	17,200	40,000	24,500	15,500
All products	1,509,600	1,037,000	472,600	392,700	277,400	115,300

1/ Includes excelsior bolts, shingle bolts, turnery bolts, etc.

Table 32.--Disposition of timber cut, South Carolina, 1957

Disposition	Softwood		Hardwood		Total	
	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent
Left in woods (logging residue)	23,399	8.4	20,508	17.8	43,907	11.2
Transported to mill	253,965	91.6	94,829	82.2	348,794	88.8
Used in manufacture	188,453	68.0	54,798	47.5	243,251	61.9
Plant residue	65,512	23.6	40,031	34.7	105,543	26.9
Used	30,790	11.1	17,000	14.7	47,790	12.2
Coarse	16,905	6.1	9,594	8.3	26,499	6.8
Fine	13,885	5.0	7,406	6.4	21,291	5.4
Unused	34,722	12.5	23,031	20.0	57,753	14.7
Coarse	13,998	5.0	11,978	10.4	25,976	6.6
Fine	20,724	7.5	11,053	9.6	31,777	8.1
Total timber cut	277,364	100.0	115,337	100.0	392,701	100.0

Table 33.--Land area by class, major forest type, and Survey Unit, South Carolina, 1936, 1947, and 1958

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1936	1947	1958	1947 to 1958
STATE				
Commercial forest land:				
Pine and oak-pine type	7,794.6	7,324.1	6,483.7	-840.4
Hardwood type	2,884.0	4,575.4	5,451.2	+875.8
Total	10,678.6	11,899.5	11,934.9	+35.4
Noncommercial forest land	25.5	43.1	80.9	+37.8
Nonforest land:				
Cropland	6,531.2	4,849.6	3,835.6	(1/)
Improved pasture	304.0	(2/)	743.5	(1/)
Idle or abandoned	749.5	1,574.7	1,423.4	-151.3
Marsh	533.2	466.8	527.2	+60.4
Urban and other	499.5	494.3	676.5	+182.2
Total	8,617.4	7,385.4	7,206.2	-179.2
All land[3/]	19,321.5	19,328.0	19,222.0	-106.0
SOUTHERN COASTAL PLAIN				
Commercial forest land:				
Pine and oak-pine type	2,182.9	1,626.8	1,373.9	-252.9
Hardwood type	810.1	1,399.5	1,739.0	+339.5
Total	2,993.0	3,026.3	3,112.9	+86.6
Noncommercial forest land	--	5.9	5.6	-0.3
Nonforest land:				
Cropland	1,447.4	1,234.8	1,135.7	(1/)
Improved pasture	31.4	(2/)	164.4	(1/)
Idle or abandoned	379.3	571.3	252.0	-319.3
Marsh	212.2	230.3	280.3	+50.0
Urban and other	91.4	91.0	168.3	+77.3
Total	2,161.7	2,127.4	2,000.7	-126.7
All land[3/]	5,154.7	5,159.6	5,119.2	-40.4

1/ Comparison not valid; pasture included with cropland in 1947.

2/ Data not available; included with cropland.

3/ Excludes all water areas.

Table 33.--Land area by class, major forest type, and Survey Unit, South Carolina, 1936, 1947, and 1958 (continued)

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1936	1947	1958	1947 to 1958
NORTHERN COASTAL PLAIN				
Commercial forest land:				
Pine and oak-pine type	3,015.5	2,705.0	2,417.7	-287.3
Hardwood type	1,482.9	2,149.5	2,258.5	+109.0
Total	4,498.4	4,854.5	4,676.2	-178.3
Noncommercial forest land	9.6	20.3	17.1	-3.2
Nonforest land:				
Cropland	2,329.4	1,718.2	1,686.0	(1/)
Improved pasture	68.2	(2/)	171.8	(1/)
Idle or abandoned	124.4	368.0	376.4	+8.4
Marsh	321.0	236.5	246.9	+10.4
Urban and other	184.6	227.2	234.0	+6.8
Total	3,027.6	2,549.9	2,715.1	+165.2
All land[3]	7,535.6	7,424.7	7,408.4	-16.3
PIEDMONT				
Commercial forest land:				
Pine and oak-pine type	2,596.2	2,992.3	2,692.1	-300.2
Hardwood type	591.0	1,026.4	1,453.7	+427.3
Total	3,187.2	4,018.7	4,145.8	+127.1
Noncommercial forest land	15.9	16.9	58.2	+41.3
Nonforest land:				
Cropland	2,754.4	1,896.6	1,013.9	(1/)
Improved pasture	204.4	(2/)	407.3	(1/)
Idle or abandoned	245.8	635.4	795.0	+159.6
Marsh	--	--	--	--
Urban and other	223.5	176.1	274.2	+98.1
Total	3,428.1	2,708.1	2,490.4	-217.7
All land[3]	6,631.2	6,743.7	6,694.4	-49.3

[1] Comparison not valid; pasture included with cropland in 1947.

[2] Data not available; included with cropland.

[3] Excludes all water areas.

Table 34.--Net volume[1] of growing stock and cull timber by diameter class, species group, and Survey Unit, South Carolina, 1936, 1947, and 1958--State as a whole

Species group	Year	All classes	Diameter class (In inches)						
			6	8	10	12	14	16-18	20+
SAWTIMBER (In million board feet)									
Softwood	1936	17,817	--	--	2,754	3,233	3,089	4,468	4,273
	1947	17,104	--	--	3,110	3,313	3,265	4,385	3,031
	1958	14,637	--	--	2,935	2,991	2,622	3,831	2,258
Hardwood	1936	12,764	--	--	--	2,062	2,142	3,822	4,738
	1947	13,038	--	--	--	2,454	2,551	4,090	3,943
	1958	11,969	--	--	--	2,342	2,468	3,628	3,531
GROWING STOCK (In million cubic feet)									
Softwood	1936	4,604	356	549	691	750	651	855	752
	1947	4,725	475	651	776	765	684	841	533
	1958	4,331	537	688	734	690	550	734	398
Hardwood	1936	3,732	214	335	427	508	513	815	920
	1947	4,103	310	404	530	607	611	874	767
	1958	4,044	355	496	572	571	587	775	688
CULL TIMBER (In million cubic feet)									
Softwood	1936	111	10	19	18	16	12	14	22
	1947	164	12	16	36	27	20	24	29
	1958	355	19	35	100	80	50	43	28
Hardwood	1936	965	92	147	144	111	97	134	240
	1947	974	102	153	156	124	104	130	205
	1958	1,420	112	178	212	244	180	237	257
ALL TIMBER (In million cubic feet)									
Softwood	1936	4,715	366	568	709	766	663	869	774
	1947	4,889	487	667	812	792	704	865	562
	1958	4,686	556	723	834	770	600	777	426
Hardwood	1936	4,697	306	482	571	619	610	949	1,160
	1947	5,077	412	557	686	731	715	1,004	972
	1958	5,464	467	674	784	815	767	1,012	945

1/ In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards used in the two surveys. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

Table 34.--Net volume[1] of growing stock and cull timber by diameter class, species group, and Survey Unit, South Carolina, 1936, 1947, and 1958 (continued)--Southern Coastal Plain

Species group	Year	All classes	Diameter class (In inches)						
			6	8	10	12	14	16-18	20+
SAWTIMBER (In million board feet)									
Softwood	1936	5,751	--	--	770	938	923	1,383	1,737
	1947	4,282	--	--	711	724	692	1,085	1,070
	1958	3,700	--	--	672	723	725	1,030	550
Hardwood	1936	4,059	--	--	--	700	680	1,228	1,451
	1947	3,562	--	--	--	737	720	1,077	1,028
	1958	3,453	--	--	--	694	755	1,025	979
GROWING STOCK (In million cubic feet)									
Softwood	1936	1,406	71	148	195	221	197	266	308
	1947	1,109	72	150	176	171	146	206	188
	1958	1,005	75	144	169	170	153	197	97
Hardwood	1936	1,181	63	106	136	171	164	261	280
	1947	1,084	59	100	143	180	174	229	199
	1958	1,131	84	138	155	166	180	218	190
CULL TIMBER (In million cubic feet)									
Softwood	1936	20	1	3	4	2	2	3	5
	1947	21	1	1	6	2	1	5	5
	1958	73	1	6	20	17	13	13	3
Hardwood	1936	393	26	46	52	39	37	55	138
	1947	233	24	32	36	29	26	28	58
	1958	399	22	50	64	65	46	76	76
ALL TIMBER (In million cubic feet)									
Softwood	1936	1,426	72	151	199	223	199	269	313
	1947	1,130	73	151	182	173	147	211	193
	1958	1,078	76	150	189	187	166	210	100
Hardwood	1936	1,574	89	152	188	210	201	316	418
	1947	1,317	83	132	179	209	200	257	257
	1958	1,530	106	188	219	231	226	294	266

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilizations standards used in the two surveys. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

Table 34.--Net volume[1] of growing stock and cull timber by diameter class, species group, and Survey Unit, South Carolina, 1936, 1947, and 1958 (continued)--Northern Coastal Plain

Species group	Year	All classes	Diameter class (In inches)						
			6	8	10	12	14	16-18	20+
SAWTIMBER (In million board feet)									
Softwood	1936	8,341	--	--	1,051	1,443	1,469	2,322	2,056
	1947	8,613	--	--	1,140	1,473	1,845	2,554	1,601
	1958	7,041	--	--	1,096	1,350	1,259	2,074	1,262
Hardwood	1936	6,534	--	--	--	987	1,059	1,931	2,557
	1947	7,040	--	--	--	1,198	1,288	2,244	2,310
	1958	5,773	--	--	--	988	1,126	1,745	1,914
GROWING STOCK (In million cubic feet)									
Softwood	1936	2,000	99	185	267	338	309	441	361
	1947	2,096	104	201	291	343	387	488	282
	1958	1,880	169	237	278	314	264	395	223
Hardwood	1936	1,824	74	147	202	242	254	410	495
	1947	2,069	122	174	245	295	310	477	446
	1958	1,824	130	198	249	238	270	370	369
CULL TIMBER (In million cubic feet)									
Softwood	1936	48	3	7	6	7	5	6	14
	1947	65	2	5	10	10	9	11	18
	1958	149	3	12	42	35	21	19	17
Hardwood	1936	404	41	67	63	52	42	59	80
	1947	484	38	70	75	64	51	76	110
	1958	643	40	70	88	112	90	112	131
ALL TIMBER (In million cubic feet)									
Softwood	1936	2,048	102	192	273	345	314	447	375
	1947	2,161	106	206	301	353	396	499	300
	1958	2,029	172	249	320	349	285	414	240
Hardwood	1936	2,228	115	214	265	294	296	469	575
	1947	2,553	160	244	320	359	361	553	556
	1958	2,467	170	268	337	350	360	482	500

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards used in the two surveys. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

Table 34.--Net volume[1] of growing stock and cull timber by diameter class, species group, and Survey Unit, South Carolina, 1936, 1947, and 1958 (continued)--Piedmont

Species group	Year	All classes	Diameter class (In inches)						
			6	8	10	12	14	16-18	20+
SAWTIMBER (In million board feet)									
Softwood	1936	3,725	--	--	933	852	697	763	480
	1947	4,209	--	--	1,259	1,116	728	746	360
	1958	3,896	--	--	1,167	918	638	727	446
Hardwood	1936	2,171	--	--	--	375	403	663	730
	1947	2,436	--	--	--	519	543	769	605
	1958	2,743	--	--	--	660	587	858	638
GROWING STOCK (In million cubic feet)									
Softwood	1936	1,198	186	216	229	191	145	148	83
	1947	1,520	299	300	309	251	151	147	63
	1958	1,446	293	307	287	206	133	142	78
Hardwood	1936	727	77	82	89	95	95	144	145
	1947	950	129	130	142	132	127	168	122
	1958	1,089	141	160	168	167	137	187	129
CULL TIMBER (In million cubic feet)									
Softwood	1936	43	6	9	8	7	5	5	3
	1947	78	9	10	20	15	10	8	6
	1958	133	15	17	38	28	16	11	8
Hardwood	1936	168	25	34	29	20	18	20	22
	1947	257	40	51	45	31	27	26	37
	1958	378	50	58	60	67	44	49	50
ALL TIMBER (In million cubic feet)									
Softwood	1936	1,241	192	225	237	198	150	153	86
	1947	1,598	308	310	329	266	161	155	69
	1958	1,579	308	324	325	234	149	153	86
Hardwood	1936	895	102	116	118	115	113	164	167
	1947	1,207	169	181	187	163	154	194	159
	1958	1,467	191	218	228	234	181	236	179

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards used in the two surveys. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

Table 35.--Thirty-year volume and growth outlook[1] in South Carolina

Kind of timber	Softwood			Hardwood			Total		
	1958	1988	Change	1958	1988	Change	1958	1988	Change
SAWTIMBER (In million bd. ft.)									
Small sawtimber									
Net inventory	8,548	8,792	+244	4,810	6,267	+1,457	13,358	15,059	+1,701
Net growth	551	719	+168	132	223	+91	683	942	+259
Large sawtimber									
Net inventory	6,089	2,954	-3,135	7,159	6,412	-747	13,248	9,366	-3,882
Net growth	343	179	-164	266	294	+28	609	473	-136
Total									
Net inventory	14,637	11,746	-2,891	11,969	12,679	+710	26,606	24,425	-2,181
Net growth	894	898	+4	398	517	+119	1,292	1,415	+123
ALL TIMBER (In million cu. ft.)									
Growing stock									
Net inventory	4,331	4,297	-34	4,044	4,835	+791	8,375	9,132	+757
Net growth	265	331	+66	116	169	+53	381	500	+119
Cull trees									
Net inventory	355	350	-5	1,420	1,674	+254	1,775	2,024	+249
Net growth	31	28	-3	25	58	+33	56	86	+30
Total									
Net inventory	4,686	4,647	-39	5,464	6,509	+1,045	10,150	11,156	+1,006
Net growth	296	359	+63	141	227	+86	437	586	+149

[1] Based on projection of average annual change between 1936 and 1958.

Table 36.--County area by class, South Carolina, 1958

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Abbeville	325.8	120.2	2.8	0.4	202.4	62.7
Aiken	707.2	219.4	10.3	0.9	476.6	68.4
Allendale	267.5	105.2	1.8	--	160.5	60.4
Anderson	497.3	296.7	8.2	(2/)	192.4	39.3
Bamberg	252.8	123.6	0.7	0.2	128.3	50.9
Barnwell	353.9	161.8	1.0	0.2	190.9	54.1
Beaufort	498.6	246.2	89.4	1.5	161.5	39.5
Berkeley	788.5	120.1	94.0	1.1	573.3	82.5
Calhoun	248.9	117.6	10.6	--	120.7	50.7
Charleston	661.8	255.8	87.1	2.7	316.2	55.0
Cherokee	252.8	108.3	1.4	1.6	141.5	56.3
Chester	377.0	112.8	4.7	0.4	259.1	69.6
Chesterfield	508.2	184.5	1.1	7.0	315.6	62.2
Clarendon	444.2	166.1	66.3	--	211.8	56.0
Colleton	678.4	191.7	14.0	0.3	472.4	71.1
Darlington	349.4	180.4	2.6	(2/)	166.4	47.8
Dillon	260.5	118.1	0.2	0.8	141.4	54.3
Dorchester	364.2	96.4	0.5	1.0	266.3	73.2
Edgefield	309.7	94.1	2.8	0.2	212.6	69.3
Fairfield	453.1	71.7	8.0	(2/)	373.4	83.9
Florence	515.2	226.2	1.1	--	287.9	56.0
Georgetown	552.3	132.9	43.0	(2/)	376.4	73.9
Greenville	508.8	223.5	9.3	24.2	251.8	50.4
Greenwood	293.1	109.2	8.0	1.0	174.9	61.3
Hampton	359.7	97.4	0.6	--	261.7	72.9
Horry	739.8	253.6	2.6	0.3	483.3	65.6
Jasper	374.4	100.8	13.6	--	260.0	72.1
Kershaw	510.1	141.1	10.7	(2/)	358.3	71.7
Lancaster	325.1	105.6	4.6	0.3	214.6	67.0
Laurens	460.8	176.0	13.3	0.1	271.4	60.6
Lee	261.8	154.5	0.2	2.8	104.3	39.9
Lexington	496.0	171.8	45.7	--	278.5	61.8
McCormick	257.9	54.3	22.0	(2/)	181.6	77.0
Marion	312.3	87.1	1.6	--	223.6	72.0
Marlboro	309.7	147.2	2.4	--	160.1	52.1
Newberry	410.2	125.7	10.6	0.5	273.4	68.4
Oconee	428.8	127.2	1.8	8.4	291.4	68.2
Orangeburg	716.8	368.8	11.0	1.5	335.5	47.5
Pickens	321.3	108.1	1.6	5.3	206.3	64.5
Richland	485.1	133.7	11.3	1.4	338.7	71.5
Saluda	288.0	96.0	11.4	--	180.6	65.3
Spartanburg	532.5	309.5	0.9	7.1	215.0	40.4
Sumter	441.6	218.6	5.2	1.0	216.8	49.7
Union	329.6	76.6	0.9	0.4	251.7	76.6
Williamsburg	598.4	195.2	1.1	--	402.1	67.3
York	446.1	174.9	11.2	8.3	251.7	57.9
State total	19,875.2	7,206.2	653.2	80.9	11,934.9	62.1

1/ Gross area from Bureau of the Census, 1950.

2/ Less than 50 acres.

Table 37.--Ownership of commercial forest land by county, South Carolina, 1958

(In thousand acres)

County	Total commercial	Public			Private
		National forest	Other public	Total	
Abbeville	202.4	19.9	1.2	21.1	181.3
Aiken	476.6	--	57.9	57.9	418.7
Allendale	160.5	--	3.6	3.6	156.9
Anderson	192.4	--	5.7	5.7	186.7
Bamberg	128.3	--	(1/)	(1/)	128.3
Barnwell	190.9	--	94.3	94.3	96.6
Beaufort	161.5	--	2.1	2.1	159.4
Berkeley	573.3	182.0	26.2	208.2	365.1
Calhoun	120.7	--	1.2	1.2	119.5
Charleston	316.2	55.3	4.4	59.7	256.5
Cherokee	141.5	--	0.1	0.1	141.4
Chester	259.1	11.5	0.4	11.9	247.2
Chesterfield	315.6	--	90.1	90.1	225.5
Clarendon	211.8	--	6.1	6.1	205.7
Colleton	472.4	--	1.5	1.5	470.9
Darlington	166.4	--	0.8	0.8	165.6
Dillon	141.4	--	--	--	141.4
Dorchester	266.3	--	0.3	0.3	266.0
Edgefield	212.6	27.6	0.2	27.8	184.8
Fairfield	373.4	12.1	0.1	12.2	361.2
Florence	287.9	--	0.4	0.4	287.5
Georgetown	376.4	--	(1/)	(1/)	376.4
Greenville	251.8	--	0.7	0.7	251.1
Greenwood	174.9	10.2	1.3	11.5	163.4
Hampton	261.7	--	5.3	5.3	256.4
Horry	483.3	--	3.0	3.0	480.3
Jasper	260.0	--	0.2	0.2	259.8
Kershaw	358.3	--	6.4	6.4	351.9
Lancaster	214.6	--	0.1	0.1	214.5
Laurens	271.4	19.9	1.7	21.6	249.8
Lee	104.3	--	(1/)	(1/)	104.3
Lexington	278.5	--	1.0	1.0	277.5
McCormick	181.6	44.4	27.5	71.9	109.7
Marion	223.6	--	(1/)	(1/)	223.6
Marlboro	160.1	--	0.1	0.1	160.0
Newberry	273.4	53.6	0.2	53.8	219.6
Oconee	291.4	69.2	9.7	78.9	212.5
Orangeburg	335.5	--	4.6	4.6	330.9
Pickens	206.3	--	8.5	8.5	197.8
Richland	338.7	--	53.4	53.4	285.3
Saluda	180.6	4.2	0.1	4.3	176.3
Spartanburg	215.0	--	2.7	2.7	212.3
Sumter	216.8	--	41.1	41.1	175.7
Union	251.7	56.4	0.1	56.5	195.2
Williamsburg	402.1	--	(1/)	(1/)	402.1
York	251.7	--	3.8	3.8	247.9
State total	11,934.9	566.3	468.1	1,034.4	10,900.5

1/ Less than 50 acres.

Table 38.--Net volume[1] of sawtimber by county and species group, South Carolina, 1958

(In million board-feet)

County	Softwood	Hardwood	Total	County	Softwood	Hardwood	Total
Abbeville	210.1	166.4	376.5	Hampton	282.7	358.4	641.1
Aiken	394.5	204.8	599.3	Horry	723.1	582.0	1,305.1
Allendale	221.0	198.8	419.8	Jasper	346.8	306.8	653.6
Anderson	118.5	171.1	289.6	Kershaw	341.2	221.7	562.9
Bamberg	142.6	232.6	375.2	Lancaster	130.9	73.7	204.6
Barnwell	91.7	187.9	279.6	Laurens	257.1	182.2	439.3
Beaufort	161.2	219.0	380.2	Lee	70.4	153.6	224.0
Berkeley	1,197.8	708.8	1,906.6	Lexington	242.7	105.8	348.5
Calhoun	183.3	204.8	388.1	McCormick	250.1	98.4	348.5
Charleston	578.2	265.4	843.6	Marion	330.4	464.2	794.6
Cherokee	107.2	113.6	220.8	Marlboro	212.7	291.6	504.3
Chester	154.4	165.9	320.3	Newberry	647.7	62.1	709.8
Chesterfield	197.9	214.5	412.4	Oconee	364.3	250.4	614.7
Clarendon	301.1	430.9	732.0	Orangeburg	414.3	456.1	870.4
Colleton	807.5	787.6	1,595.1	Pickens	135.3	271.2	406.5
Darlington	290.7	214.4	505.1	Richland	350.6	503.3	853.9
Dillon	263.5	180.6	444.1	Saluda	186.5	128.0	314.5
Dorchester	559.1	438.6	997.7	Spartanburg	112.9	80.3	193.2
Edgefield	323.1	120.0	443.1	Sumter	398.2	532.0	930.2
Fairfield	363.1	186.0	549.1	Union	250.6	287.6	538.2
Florence	706.7	418.4	1,125.1	Williamsburg	613.5	666.1	1,279.6
Georgetown	796.5	516.7	1,313.2	York	92.3	207.4	299.7
Greenville	95.5	348.1	443.6				
Greenwood	368.7	164.4	533.1	State total	15,388.2	13,142.2	28,530.4

---

[1] Log scale, International 1/4-inch rule.

Table 39.--Net volume[1] of growing stock and cull timber by pulping species group and county, South Carolina, 1958

(In thousand cords)

County	Growing stock				Cull timber				Total all timber
	Softwood	Soft hardwood	Hard hardwood	Total	Softwood	Soft hardwood	Hard hardwood	Total	
Abbeville	1,059	450	502	2,011	37	156	104	297	2,308
Aiken	1,872	589	359	2,820	46	333	175	554	3,374
Allendale	668	437	353	1,458	64	128	86	278	1,736
Anderson	816	366	459	1,641	33	39	57	129	1,770
Bamberg	465	673	297	1,435	17	129	92	238	1,673
Barnwell	378	480	412	1,270	14	187	124	325	1,595
Beaufort	632	462	416	1,510	49	159	231	439	1,949
Berkeley	4,304	1,531	1,322	7,157	81	424	378	883	8,040
Calhoun	671	679	211	1,561	26	98	90	214	1,775
Charleston	2,238	741	505	3,484	72	180	266	518	4,002
Cherokee	727	244	375	1,346	54	42	71	167	1,513
Chester	949	464	508	1,921	36	66	101	203	2,124
Chesterfield	889	653	287	1,829	82	191	159	432	2,261
Clarendon	897	1,101	653	2,651	74	174	90	338	2,989
Colleton	2,730	2,171	1,297	6,198	28	285	197	510	6,708
Darlington	901	735	308	1,944	5	171	69	245	2,189
Dillon	913	685	246	1,844	30	79	39	148	1,992
Dorchester	1,783	1,058	594	3,435	47	336	242	625	4,060
Edgefield	1,716	434	316	2,466	4	64	90	158	2,624
Fairfield	1,840	560	487	2,887	97	92	92	281	3,168
Florence	2,191	1,223	545	3,959	58	358	97	513	4,472
Georgetown	2,838	1,406	867	5,111	24	205	123	352	5,463
Greenville	594	611	973	2,178	69	126	242	437	2,615
Greenwood	1,373	427	350	2,150	71	69	82	222	2,372
Hampton	952	975	638	2,565	57	266	132	455	3,020
Horry	2,439	1,920	793	5,152	139	510	270	919	6,071
Jasper	1,192	696	578	2,466	40	113	123	276	2,742
Kershaw	1,766	728	380	2,874	64	145	150	359	3,233
Lancaster	846	135	327	1,308	73	136	107	316	1,624
Laurens	1,200	507	413	2,120	17	140	119	276	2,396
Lee	268	527	134	929	16	89	35	140	1,069
Lexington	1,012	353	282	1,647	27	102	126	255	1,902
McCormick	1,253	205	281	1,739	14	11	55	80	1,819
Marion	1,094	1,466	576	3,136	20	269	142	431	3,567
Marlboro	708	987	439	2,134	12	119	38	169	2,303
Newberry	2,877	435	255	3,567	114	42	75	231	3,798
Oconee	1,352	142	1,320	2,814	41	66	295	402	3,216
Orangeburg	1,341	1,392	910	3,643	67	355	182	604	4,247
Pickens	637	355	1,083	2,075	57	81	309	447	2,522
Richland	1,307	1,306	664	3,277	63	227	196	486	3,763
Saluda	1,055	294	331	1,680	51	40	69	160	1,840
Spartanburg	1,040	227	434	1,701	44	36	132	212	1,913
Sumter	1,356	1,359	461	3,176	68	167	82	317	3,493
Union	1,255	769	536	2,560	34	134	163	331	2,891
Williamsburg	2,006	1,340	1,059	4,405	50	417	383	850	5,255
York	820	525	538	1,883	38	82	139	259	2,142
State total	61,220	34,823	25,074	121,117	2,224	7,638	6,619	16,481	137,598

---

[1] Sound wood and bark.

3.63/7:56

library

1959 PULPWOOD PRODUCTION IN THE SOUTH

1959 PULPWOOD PRODUCTION IN THE SOUTH

A. S. Todd, Jr.
and
Agnes C. Nichols

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
Asheville, North Carolina
and
SOUTHERN FOREST EXPERIMENT STATION
New Orleans, Louisiana
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
Atlanta, Georgia

PULPWOOD OUTPUT IN THE SOUTH reached 22,750,100 cords in 1959, an all-time record. The previous high was 20,344,900 cords set in pre-recession 1956. The year 1959 also saw continued rapid expansion in the use of hardwood species and wood residues, the latter chiefly in the form of chips from sawmills. Altogether, 81 pulpmills received wood from the South, and 76 of these were southern mills.

Pulpwood production was generally upward :om 1958 levels (table 1). Southwide, it rose 2 percent. Virginia, with a 19-percent inrease, registered the greatest gain, followed y Arkansas and Georgia with 16 percent. nly two states, Oklahoma and Tennessee, nowed a decline. For the twelfth year Georgia as the leading producer of the Southern tates, with over 4.7 million cords. Alabama ontinued a strong second, with North Carona, Florida, Mississippi, and South Carolina early tied for third place.

able 1.—*1959 pulpwood production in the South and change from 1958*

ate	Round pulpwood and residues	Change
	Thousand cords	*Percent*
labama	2,931.0	+12
rkansas	1,524.3	+16
orida	2,113.4	+15
eorgia	4,735.1	+16
uisiana	1,799.6	+14
ississippi	2,015.8	+ 7
orth Carolina	2,145.8	+13
klahoma	54.8	−13
uth Carolina	1,933.3	+11
nnessee	353.0	(1)
xas	1,415.6	+ 2
rginia	1,728.4	+19
l states	22,750.1	+12

Negligible.

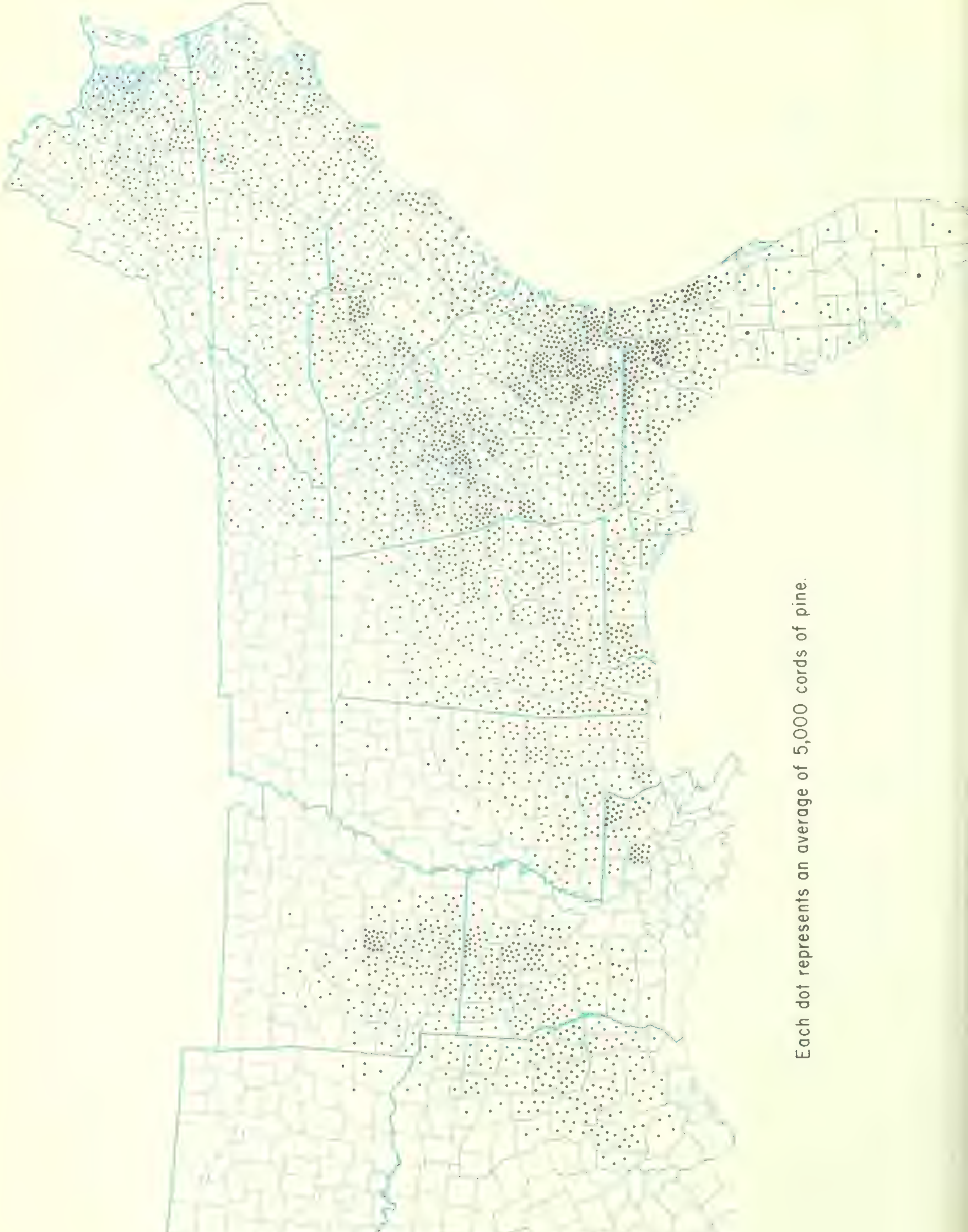
ROUNDWOOD PRODUCTION

Roundwood—bolts cut from standing timber —provides most of the wood pulped. Out of he total southern production of 22,750,100 cords, 20,288,000 or practically 90 percent was in this form as compared with 18,447,400 cords in 1958.

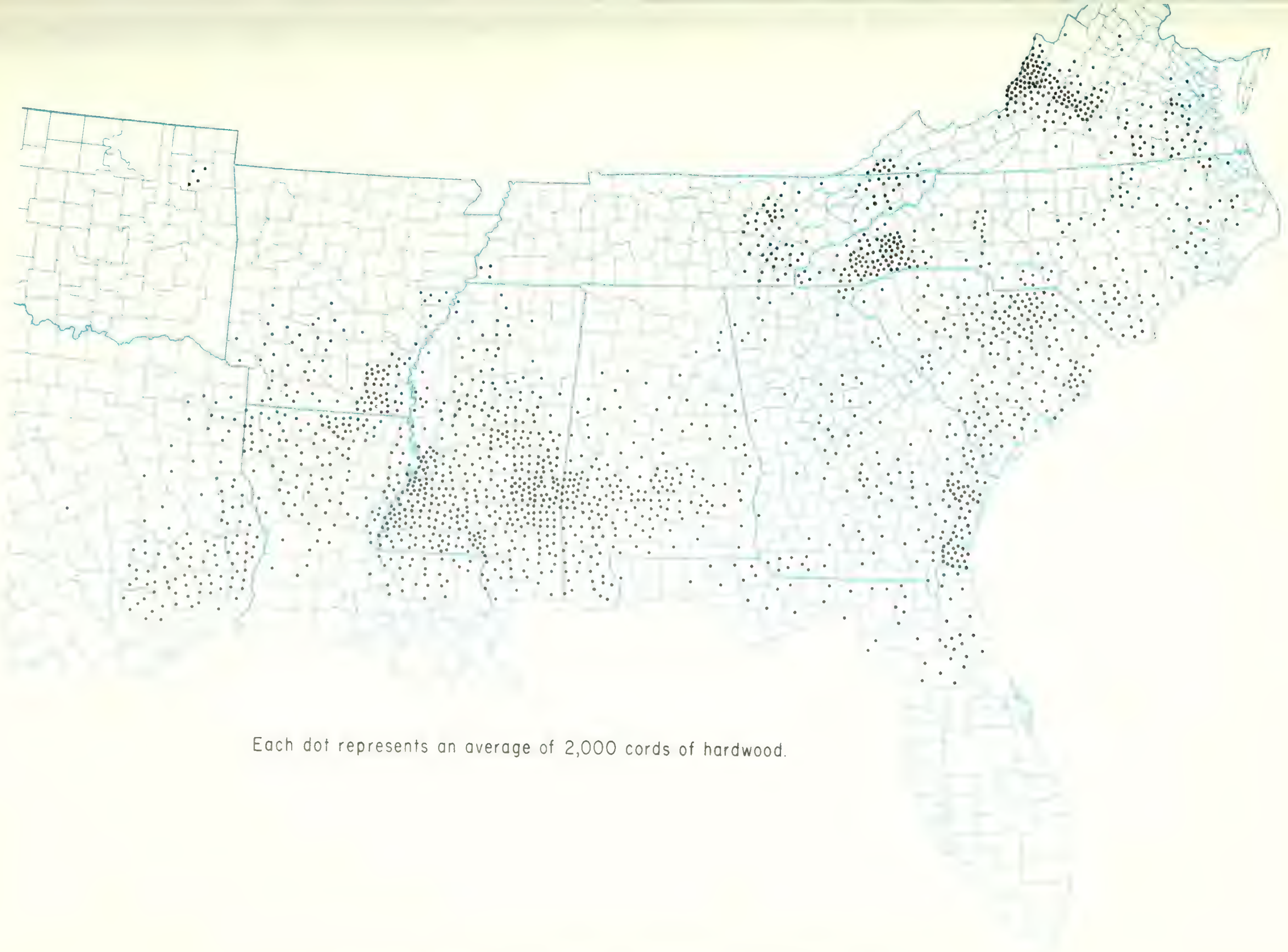
About four-fifths of the roundwood was of the southern pine species (table 2). Loblolly and shortleaf predominated and with longleaf and slash made up the bulk of the cut. However, a substantial volume of Virginia pine was produced in the piedmont and mountains of the Southeast, while pond, pitch, and even sand pine were locally important.

Although pine roundwood is still the mainstay of the pulp industry, the use of hardwoods has been expanding for the past decade. In 1959, this trend was accentuated. Hardwood production was 3,772,500 cords, up a record 28 percent from the previous year. However, perhaps more notable than the increase itself was the size of the production gain in relation to that of pine. Hardwoods, which have comprised from 14 to 16 percent of the total roundwood harvest in recent years, now account for 19 percent. Letting the more abundant hardwoods play a greater role in supporting pulp industry expansion is a significant step toward better timber utilization. By relieving pressure on the heavily used pines, it augurs well for the timber supply and the continued orderly growth of the industry.

Less favorable from a conservation standpoint is the distribution of the hardwood cut among the various hardwood species. At one time, pulpable hardwoods were almost exclusively soft-textured, notably the gums and



Each dot represents an average of 5,000 cords of pine.



Each dot represents an average of 2,000 cords of hardwood.

Figure 2. *Hardwood roundwood production by county, 1959.*

yellow-poplar. The introduction of semichemical and other hardwood pulping processes has altered this situation considerably in certain parts of the South, and some firm-textured species are produced in every state. However, table 2 indicates that the industry's preference for soft-textured species is still pronounced. Regionwide, they make up 72 percent of the round hardwood, and in certain states almost 95 percent; yet, the hardwood growing stock of the Region is 60 percent oaks, hickories, etc. Spokesmen of industry say this imbalance will be gradually corrected, and such development is particularly desirable as over-all consumption of hardwood rises.

Table 2.—*1959 roundwood production by state and species group*

State	All species	Pine	Soft hardwoods [1]	Hard hardwoods
	Thousand cords			
Alabama	2,582.2	2,150.7	406.0	25.5
Arkansas	1,192.4	1,002.0	152.6	37.8
Florida	1,979.3	1,882.5	73.7	23.1
Georgia	4,354.5	4,009.0	301.9	43.6
Louisiana	1,612.1	1,297.4	238.2	76.5
Mississippi	1,875.5	1,024.3	769.2	82.0
North Carolina	1,834.1	1,429.5	179.2	225.4
Oklahoma	38.1	29.1	.6	8.4
South Carolina	1,709.9	1,342.1	268.2	99.6
Tennessee	346.1	200.8	27.3	118.0
Texas	1,120.0	906.3	199.6	14.1
Virginia	1,643.8	1,241.8	94.7	307.3
All states	20,288.0	16,515.5	2,711.2	1,061.3

[1] The gums, cottonwood, willow, yellow-poplar, bay, magnolia, maple, basswood, sycamore, soft elm, hackberry.

The geographic distribution of roundwood production (figs. 1 and 2) is beginning to coincide more and more closely with the natural occurrence of the various species in the woods. This is especially true of the pines. Twenty years ago, there were only 25 pine pulpmills in the South, nearly all in the coastal area. Except for a cluster in Louisiana and south Arkansas, they were rather widely spaced. Consequently, pine pulpwood production was spotty and localized. Today, there is hardly a tract of pine that is not within easy reach of a mill, and pine pulpwood is cut in almost every county or parish where it grows.

The pattern of hardwood production is not yet so widespread. Nevertheless, some hardwood is cut in every state and in a majority of the counties in several states. Comparison of the 1959 pattern with those for earlier years indicates that hardwood production will soo
be general throughout all parts of the South

Tables 10 to 21 show the 1959 productio
of roundwood by county. Baldwin County
Alabama, with 147,000 cords, led all the othe
southern counties in production, as it has i
many preceding years. A close second wa
Camden County, Georgia, with 143,000. Ir
cluding these two, there were 12 counties wit
cuts of more than 100,000 cords. Another 2
produced between 75,000 and 100,000, whil
79 more were in the 50,000 to 75,000 class.

PRODUCTION FROM RESIDUES

The pulping of wood residues continues
expand. Production from this source totale
2,462,100 cords in 1959, a 38-percent increa
over 1958. Ninety-seven percent of this m
terial was in the form of chips from sawmil
and veneer plants; the rest consisted of vene
cores, cull crossties, pole and piling ends, ai
other coarse residues.

The pulp and paper industry has alwa
been keenly interested in the possibilities
utilizing the wood waste of other industries.
number of southern hardwood mills origina
depended on spent chips from now defu t
tanning extract plants and, during the lab
short years of World War II, there was expe
mentation with residues from a wide vari y
of sources. In 1952, the first successful sawr ll
installations of barkers and chippers m e
several million cords of slabs and edgings r
year usable. During 1953, pulpmill receipts f
chipped residues amounted to 25,700 cords (g.
3). Since then, the volume of chips purcha d
has climbed rapidly as more and more sawm ls

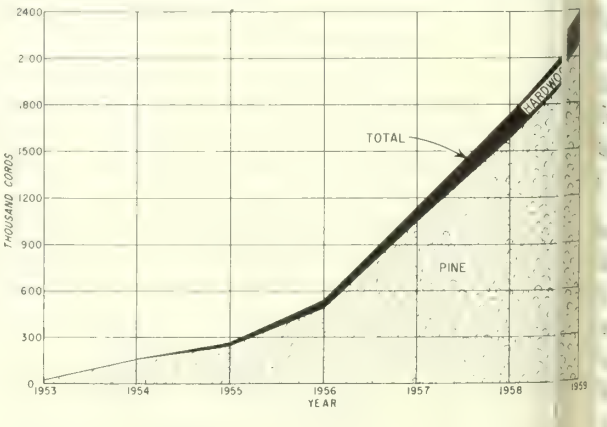
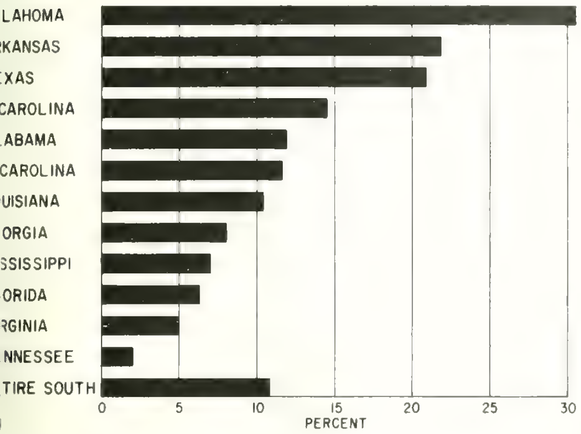


Figure 3. *Chipped-residue production, 1953-1 9.*

stalled the necessary equipment. Today some 0 plants are converting their residues to pulp ips, and 1959 production was almost 2.4 illion cords.

Residues, chipped and unchipped, accounted r 10.8 percent of all pulpwood in 1959 (fig. 4).



gure 4. *Portion of total production obtained from wood residues, 1959.*

individual states, the percents varied from in Tennessee to 30.5 in Oklahoma. How ıch of the annual wood requirement can entually be filled from residues is uncertain. formed estimates for the South as a whole nge between 15 and 20 percent, a few even gher.

RODUCTION TRENDS BY KIND OF WOOD

With the onset of the business recession in 57, pulpwood production dropped some 560,0 cords from the record high of 1956. During e gradual 1958 recovery, about 80 percent this loss was regained. Then, in 1959, a new cord was set. How did these fluctuations ect the pattern of production by kind of od? The effects were far from uniform and y disclose a trend of more than passing erest.

Examining the production of the past four ars (table 3), one is struck by the fact that ly pine roundwood declined significantly. und hardwood was held to minor increases 1957 and 1958, but climbed more rapidly ring 1959 than in any previous year. Chip put, largely controlled by purchase contcts covering several years, could not decline. On the other hand, there is no indication that the growth of the chip procurement program was even impeded. Production of pine chips, for instance, continued to expand a steady half-million cords each year.

With the production of most forms of wood on the increase, pine roundwood took the full effects of curtailed pulpmill activity. In 1957, while total production declined 560,000 cords, round pine fell 1.2 million. In 1958, when total production rose 450,000, round pine lost an additional 210,000. Even in 1959, with total production up 2.5 million cords, round pine showed only a sluggish recovery—an increase of slightly over 1 million cords. This left it still 400,000 cords short of the 1956 mark.

THE EXPANDING MARKET FOR WOOD

Completion of a new pulpmill in South Carolina during the year brought the total number in the Region to 76, with a combined daily capacity of 46,112 tons of dry pulp (table 4). Flor-

Table 3.—*Pulpwood production by type of wood, 1956-1959*

Type of wood	Production			
	1956	1957	1958	1959
	Thousand cords			
Round pine	16,920	15,714	15,503	16,515
Round hardwood	2,766	2,866	2,944	3,773
Pine chips	488	1,047	1,581	2,177
Hardwood chips	46	78	146	207
Other pine residue	15	11	8	9
Other hardwood residue	110	67	51	69
All types	20,345	19,783	20,233	22,750

Table 4.—*Number of pulp mills and pulping capacity by state, 1959* [1]

State	Mills	24-hour capacity
	Number	*Tons*
Alabama	9	4,203
Arkansas	4	2,285
Florida	10	8,100
Georgia	10	6,875
Louisiana	10	5,605
Mississippi	6	3,072
North Carolina	5	3,835
Oklahoma	1	90
South Carolina	4	4,330
Tennessee	4	1,832
Texas	5	2,405
Virginia	8	3,480
All states	76	46,112

[1] Southern Pulp and Paper Manufacturer, vol. 22, no. 10 (Oct. 1, 1959); and other sources.

ida, with 10 mills and 8,100 tons capacity, ranked first among the southern states. Georgia and Louisiana, each with 10 mills also, ranked second and third.

By year's end, seven additional pulpmills were either planned or already under construction. When completed, they will add an estimated 2,125 tons of capacity, and announced enlargement of existing plants will add still more. Tables 22 and 23 list the pulpmills existing and planned, while the map in figure 7 shows their location.

Growth of the pulp and paper industry ha not only intensified the competition for woo but has extended the wood market to all part of the South. One index of competition is th number of mills that procure wood from a area. Half the counties that produce pulpwoo now supply four or more mills simultaneousl (figs. 5 and 6), and it is not too unusual to fin buyers from 10 or more mills active in a singl county. As for the nonproducing counties, the are becoming fewer in number each year an are largely restricted to areas with little pul able timber.

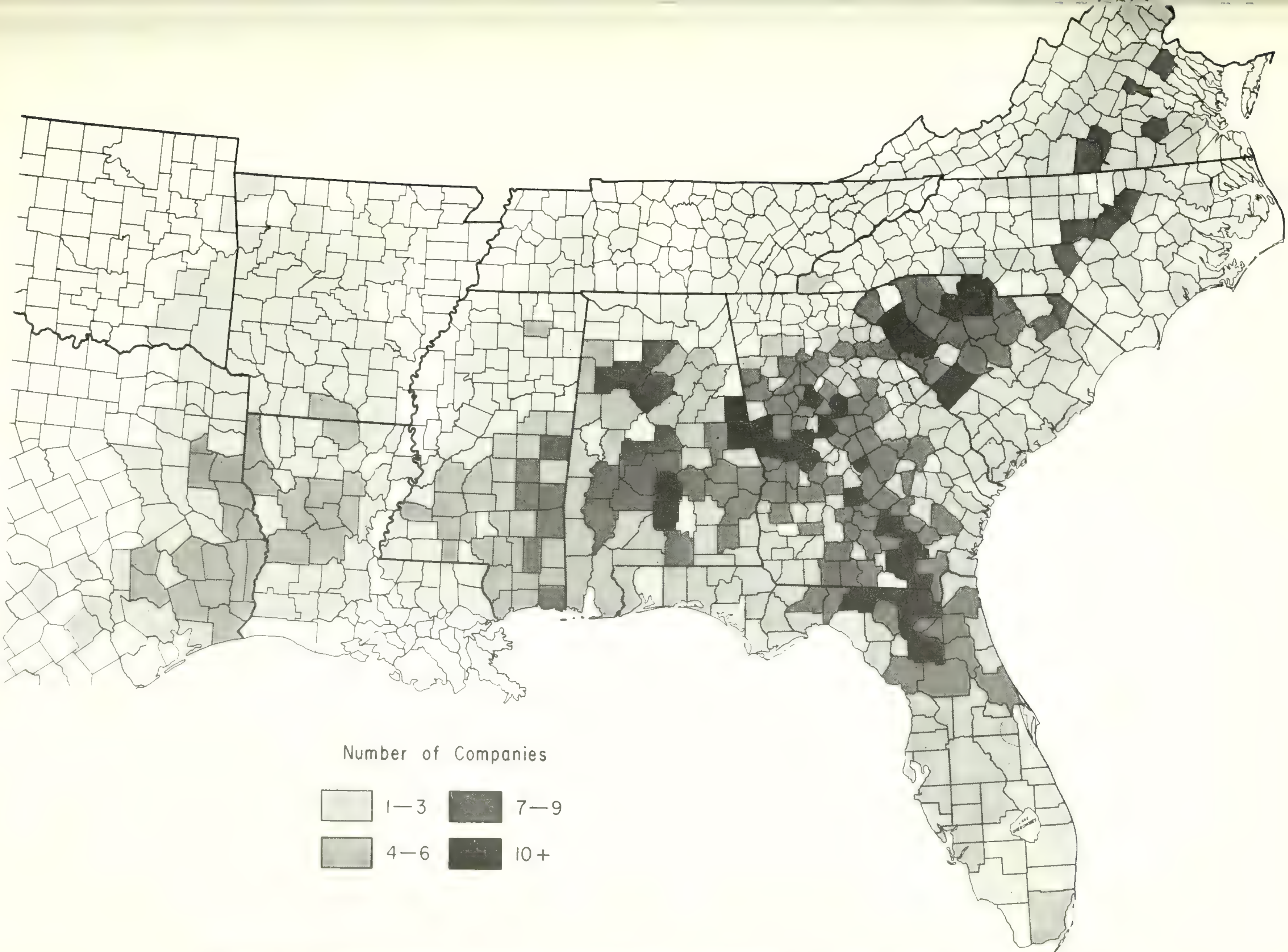
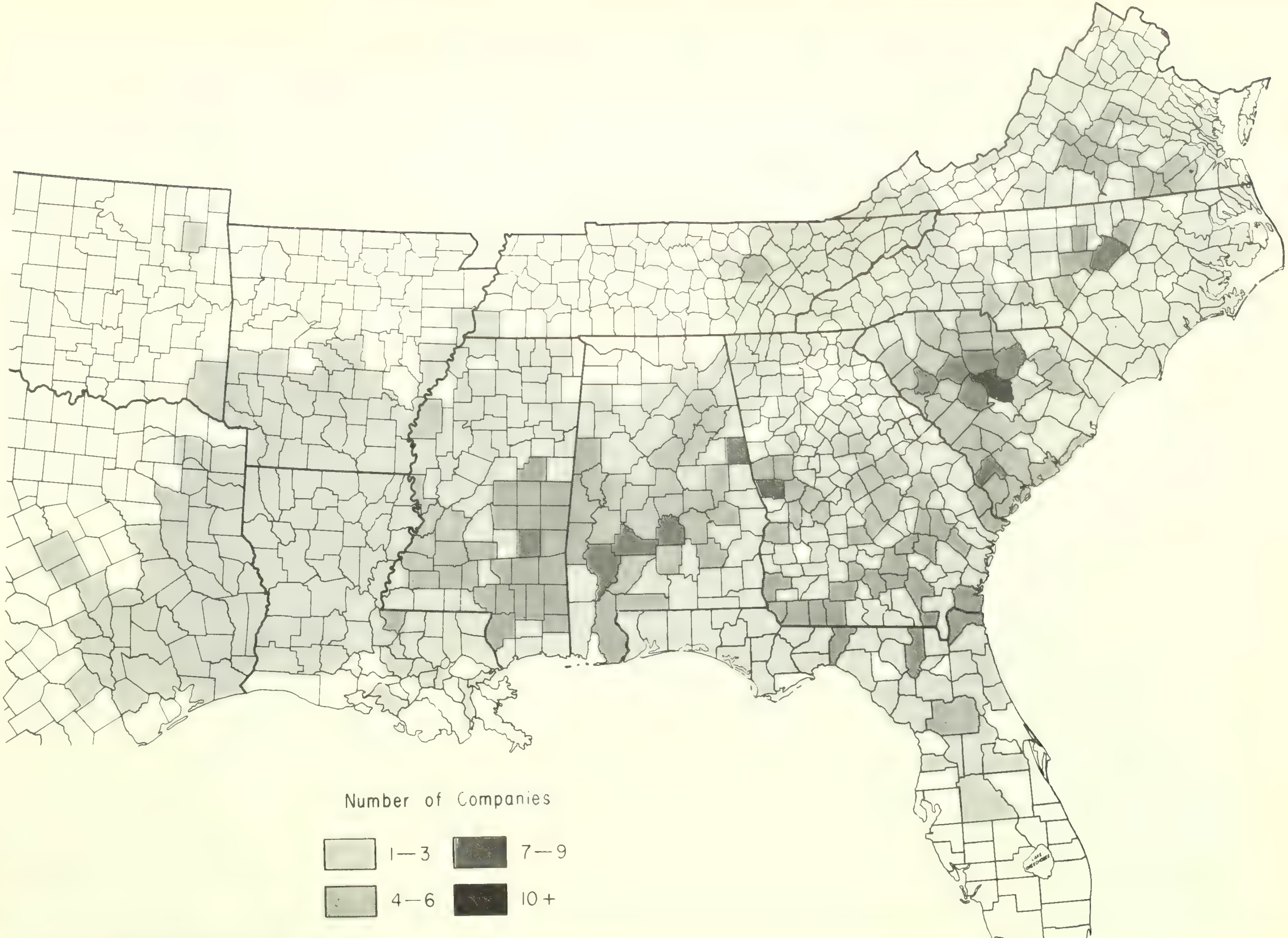


Figure 5. *Number of pulp companies procuring pine roundwood, by county, 1959*



Number of Companies
1—3
4—6
7—9
10+

DETAILED TABLES

Table 5. *Round pulpwood production in the South, by state and species group, 1959 and 1958*

State	Change from 1958	1959			1958		
		All species	Pine	Hardwood	All species	Pine	Hardwood
	Percent			*Thousand cords*			
Alabama	+ 9	2,582.2	2,150.7	431.5	2,370.2	2,187.8	182.4
Arkansas	+14	1,192.4	1,002.0	190.4	1,041.5	893.5	148.0
Florida	+13	1,979.3	1,882.5	96.8	1,752.3	1,690.8	61.5
Georgia	+13	4,354.5	4,009.0	345.5	3,860.4	3,583.5	276.9
Louisiana	+12	1,612.1	1,297.4	314.7	1,438.2	1,207.6	230.6
Mississippi	+ 5	1,875.5	1,024.3	851.2	1,786.0	1,035.8	750.2
North Carolina	+ 8	1,834.1	1,429.5	404.6	1,706.0	1,342.7	363.3
Oklahoma	−19	38.1	29.1	9.0	47.0	38.0	9.0
South Carolina	+ 7	1,709.9	1,342.1	367.8	1,592.7	1,346.3	246.4
Tennessee	− 1	346.1	200.8	145.3	348.5	241.1	107.4
Texas	− 1	1,120.0	906.3	213.7	1,126.9	954.0	172.9
Virginia	+19	1,643.8	1,241.8	402.0	1,377.7	981.7	396.0
All states	+10	20,288.0	16,515.5	3,772.5	18,447.4	15,502.8	2,944.6

Table 6. *Wood residues used for pulp manufacture in the South, by state and species group, 1959 and 1958*

State	Change from 1958	1959			1958		
		All species	Pine	Hardwood	All species	Pine	Hardwood
	Percent			*Thousand cords*			
Alabama	+37	348.8	294.4	54.4	254.4	211.1	43.3
Arkansas	+22	331.9	323.4	8.5	272.9	265.0	7.9
Florida	+62	134.1	123.2	10.9	82.6	79.3	3.3
Georgia	+64	380.6	353.7	26.9	232.5	211.6	20.9
Louisiana	+29	187.5	160.2	27.3	145.4	125.6	19.8
Mississippi	+42	140.3	93.6	46.7	99.0	49.2	49.8
North Carolina	+64	311.7	275.5	[1] 36.2	190.1	174.1	[2] 16.0
Oklahoma	+ 4	16.7	16.7	...	16.1	16.1	.
South Carolina	+44	223.4	192.1	31.3	155.1	134.9	20.2
Tennessee	+13	6.9	.7	6.2	6.1	.3	5.8
Texas	+14	295.6	279.0	16.6	259.1	254.4	4.7
Virginia	+17	84.6	73.9	10.7	72.1	67.0	5.1
All states	+38	2,462.1	2,186.4	275.7	1,785.4	1,588.6	196.8

[1] Includes 525 cords of hemlock.

[2] Includes 434 cords of hemlock.

Table 7. *Wood residues used for pulp manufacture in the South, by state and type of residue, 1959*

State	All types	Chips			Other residues [1]		
		All species	Pine	Hardwood	All species	Pine	Hardwood
				Thousand cords			
Alabama	348.8	339.8	291.9	47.9	9.0	2.5	6.5
Arkansas	331.9	327.9	321.1	6.8	4.0	2.3	1.7
Florida	134.1	127.0	122.9	4.1	7.1	.3	6.8
Georgia	380.6	370.5	352.4	18.1	10.1	1.3	8.8
Louisiana	187.5	185.1	159.7	25.4	2.4	.5	1.9
Mississippi	140.3	131.4	93.5	37.9	8.9	.1	8.8
North Carolina	311.7	289.4	274.4	15.0	22.3	1.1	[2] 21.2
Oklahoma	16.7	16.7	16.7	..	.	.	.
South Carolina	223.4	215.8	191.8	24.0	7.6	.3	7.3
Tennessee	6.9	6.3	.7	5.6	.6	.	.6
Texas	295.6	293.5	278.9	14.6	2.1	.1	2.0
Virginia	84.6	81.0	73.9	7.1	3.6	.	3.6
All states	2,462.1	2,384.4	2,177.9	206.5	77.7	8.5	69.2

[1] Veneer cores, pole and piling trim, cull crossties, etc.

[2] Includes 525 cords of hemlock.

Table 8. *Pulpwood production by state and survey region, 1959, in territory served by Southeastern and Southern Forest Experiment Stations*

Round pulpwood and residues	Survey region[1]	All species	Pine	Hardwood
	No.	*Standard cords*		
		SOUTH		
Roundwood		20,287,997	16,515,472	3,772,525
Wood residues		2,462,140	2,186,410	275,730
All pulpwood		22,750,137	18,701,882	4,048,255
		SOUTHEASTERN STATION		
		FLORIDA		
Roundwood	1	1,285,378	1,216,907	68,471
	2	529,288	501,499	27,789
	3	125,387	124,880	507
	4	39,288	39,288	
Total		1,979,341	1,882,574	96,767
Wood residues		134,080	123,191	10,889
All pulpwood		2,113,421	2,005,765	107,656
		GEORGIA		
Roundwood	1	1,851,859	1,640,505	211,354
	2	440,433	406,041	34,392
	3	1,275,326	1,214,446	60,880
	4	603,122	588,947	14,175
	5	183,759	159,115	24,644
Total		4,354,499	4,009,054	345,445
Wood residues		380,591	353,644	26,947
All pulpwood		4,735,090	4,362,698	372,392
		NORTH CAROLINA		
Roundwood	1	603,795	522,410	81,385
	2	426,800	364,475	62,325
	3	517,283	421,317	95,966
	4	286,196	121,252	164,944
Total		1,834,074	1,429,454	404,620
Wood residues		311,772	275,526	36,246
All pulpwood		2,145,846	1,704,980	440,866
		SOUTH CAROLINA		
Roundwood	1	359,470	268,402	91,068
	2	578,859	378,265	200,594
	3	771,593	695,408	76,185
Total		1,709,922	1,342,075	367,847
Wood residues		223,421	192,124	31,297
All pulpwood		1,933,343	1,534,199	399,144
		VIRGINIA		
Roundwood	1	598,455	511,116	87,339
	2	510,419	430,450	79,969
	3	259,860	206,048	53,812
	4	237,686	81,752	155,934
	5	37,408	12,440	24,968
Total		1,643,828	1,241,806	402,022
Wood residues		84,536	73,831	10,705
All pulpwood		1,728,364	1,315,637	412,727
		SOUTHERN STATION		
		ALABAMA		
Roundwood	1	433,465	360,441	73,024
	2	548,187	386,853	161,334
	3	798,012	662,132	135,880
	4	274,171	246,784	27,387
	5	496,435	463,164	33,271
	6	31,872	31,330	542
Total		2,582,142	2,150,704	431,438
Wood residues		348,820	294,456	54,364
All pulpwood		2,930,962	2,445,160	485,802
		ARKANSAS		
Roundwood	1	68,138	28,567	39,571
	2	627		627
	3	967,849	821,311	146,538
	4	123,314	119,633	3,681
	5	32,435	32,435	
Total		1,192,363	1,001,946	190,417
Wood residues		331,903	323,451	8,452
All pulpwood		1,524,266	1,325,397	198,869
		LOUISIANA		
Roundwood	1	93,127	25,403	67,724
	2	22,078	7,454	14,624
	3	381,309	330,602	50,707
	4	313,927	271,405	42,522
	5	801,621	662,485	139,136
Total		1,612,062	1,297,349	314,713
Wood residues		187,543	160,199	27,344
All pulpwood		1,799,605	1,457,548	342,057
		MISSISSIPPI		
Roundwood	1	100,426	5,375	95,051
	2	122,513	49,853	72,660
	3	633,684	373,703	259,981
	4	613,616	412,236	201,380
	5	405,305	183,127	222,178
Total		1,875,544	1,024,294	851,250
Wood residues		140,231	93,570	46,661
All pulpwood		2,015,775	1,117,864	897,911
		OKLAHOMA		
Roundwood	1	29,250	29,038	212
	2	8,847	31	8,816
Total		38,097	29,069	9,028
Wood residues		16,741	16,741	
All pulpwood		54,838	45,810	9,028
		TENNESSEE		
Roundwood	1	12,173	7,107	5,066
	2	2,834	2,834	
	3			
	4	82,845	42,170	40,675
	5	248,225	148,707	99,518
Total		346,077	200,818	145,259
Wood residues		6,911	665	6,246
All pulpwood		352,988	201,483	151,505
		TEXAS		
Roundwood	1	698,146	530,399	167,747
	2	402,160	361,326	40,834
	3	19,742	14,604	5,138
Total		1,120,048	906,329	213,719
Wood residues		295,591	279,012	16,579
All pulpwood		1,415,639	1,185,341	230,298

[1] For location of Survey regions, see figure 7.

Table 9. *1959 pulpwood production in territory served by Southeastern and Southern Forest Experiment Stations*

Station and type of wood	All species	Pine	Hardwood
	Standard cords		
Southeastern			
Roundwood	11,521,664	9,904,963	1,616,701
Residues	1,134,400	1,018,316	116,084
Total	12,656,064	10,923,279	1,732,785
Southern			
Roundwood	8,766,333	6,610,509	2,155,824
Residues	1,327,740	1,168,094	159,646
Total	10,094,073	7,778,603	2,315,470
All pulpwood	22,750,137	18,701,882	4,048,255

able 10. *Round pulpwood production in Alabama, 1959*

County	All species	Pine	Hardwood
	Standard cords		
tauga	15,212	12,912	2,300
ldwin	147,307	123,054	24,253
rbour	41,197	35,350	5,847
ob	31,149	28,157	2,992
ount	13,666	12,683	983
llock	36,468	30,859	5,609
tler	73,399	54,404	18,995
lhoun	20,439	20,051	388
ambers	48,858	45,136	3,722
erokee	27,382	20,998	6,384
ilton	34,876	30,381	4,495
octaw	112,151	65,218	46,933
arke	96,884	64,592	32,292
ay	45,510	43,209	2,301
eburne	26,655	26,060	595
ffee	31,975	27,001	4,974
lbert	545	545	
necuh	73,437	62,239	11,198
osa	67,317	63,647	3,670
vington	39,179	34,770	4,409
enshaw	20,013	13,623	6,390
llman	17,678	17,191	487
le	15,700	14,887	813
llas	25,838	19,377	6,461
Kalb	7,686	7,244	442
more	33,873	32,879	994
cambia	66,224	58,662	7,562
owah	17,878	16,605	1,273
yette	26,802	25,337	1,465
anklin	3,198	3,198	
neva	15,469	14,735	734
eene	36,353	32,033	4,320
le	23,864	21,150	2,714
nry	27,485	25,052	2,433
uston	8,274	6,102	2,172

County	All species	Pine	Hardwood
	Standard cords		
Jackson	4,557	4,557	
Jefferson	39,495	37,221	2,274
Lamar	13,855	13,065	790
Lauderdale	473	473	
Lawrence	317	317	
Lee	50,195	43,040	7,155
Limestone	1,648	1,648	
Lowndes	73,057	46,207	26,850
Macon	22,025	21,552	473
Madison	1,251	1,251	
Marengo	71,006	52,048	18,958
Marion	5,729	5,723	6
Marshall	7,589	7,489	100
Mobile	93,031	73,181	19,850
Monroe	76,764	61,518	15,246
Montgomery	49,678	35,854	13,824
Morgan	4,608	4,608	
Perry	33,092	28,204	4,888
Pickens	43,681	38,992	4,689
Pike	71,392	58,190	13,202
Randolph	61,551	55,158	6,393
Russell	32,900	28,151	4,749
St. Clair	29,308	28,274	1,034
Shelby	49,487	45,776	3,711
Sumter	34,542	29,508	5,034
Talladega	40,911	38,670	2,241
Tallapoosa	73,476	69,788	3,688
Tuscaloosa	56,298	50,775	5,523
Walker	32,062	30,525	1,537
Washington	87,724	70,774	16,950
Wilcox	83,403	51,730	31,673
Winston	7,096	7,096	
All counties	2,582,142	2,150,704	431,438

Table 11. *Round pulpwood production in Arkansas, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Ashley	81,903	43,278	38,625
Benton	48	48	
Bradley	52,954	50,866	2,088
Calhoun	52,835	51,386	1,449
Chicot	9,729		9,729
Clark	64,469	55,864	8,605
Cleburne	4,046	4,046	
Cleveland	25,205	24,359	846
Columbia	66,250	58,968	7,282
Conway	3,798	3,798	
Crawford	1,829	1,829	
Crittendon	627		627
Dallas	68,697	63,680	5,017
Desha	14,324		14,324
Drew	56,053	24,123	31,930
Faulkner	938	938	
Franklin	295	295	
Garland	15,650	15,650	
Grant	114,213	111,135	3,078
Hempstead	27,609	19,583	8,026
Hot Spring	42,399	38,843	3,556
Howard	16,650	16,044	606
Independence	1,804	1,804	
Izard	296	296	
Jefferson	25,164	23,007	2,157
Johnson	7,247	7,247	
Lafayette	28,773	20,420	8,353
Lee	9,198		9,198
Lincoln	6,074	5,560	514
Little River	14,625	13,046	1,579
Logan	7,460	7,460	
Miller	22,534	22,003	531
Montgomery	26,503	25,219	1,284
Nevada	23,481	20,553	2,928
Newton	156	156	
Ouachita	59,062	48,300	10,762
Perry	19,759	19,759	
Phillips	3,649		3,649
Pike	29,362	25,476	3,886
Polk	11,037	10,693	344
Pope	9,226	9,226	
Pulaski	4,628	4,602	26
Saline	20,249	18,222	2,027
Scott	1,282	1,282	
Sebastian	11	11	
Sevier	14,755	13,622	1,133
Stone	166	166	
Union	106,020	99,762	6,258
Van Buren	913	913	
White	1,673	1,673	
Yell	16,735	16,735	
All counties	1,192,363	1,001,946	190,417

ble 12. *Round pulpwood production in Florida, 1959*

ounty	All species	Pine	Hardwood
	Standard cords		
chua	55,273	53,976	1,297
ker	98,871	98,671	200
y	29,331	29,125	206
dford	58,313	58,313	...
vard	13,439	13,439	
ward	19	19	...
lhoun	25,908	24,123	1,785
arlotte	5,918	5,918	...
rus	3,897	3,897	...
y	45,951	43,897	2,054
llier	6,581	6,581	...
lumbia	85,450	76,193	9,257
de	11,517	11,517	...
Soto	3,008	3,008	...
ie	53,127	49,985	3,142
val	66,237	62,664	3,573
ambia	72,769	70,746	2,023
gler	77,678	76,642	1,036
nklin	13,844	13,844	...
dsden	29,088	25,035	4,053
christ	7,722	7,657	65
des	697	697	...
lf	16,145	16,032	113
milton	83,821	79,161	4,660
rdee	12,584	12,584	...
ndry	6,060	6,060	...
nando	10,886	10,695	191
hlands	1,639	1,639	...
lsborough	5,980	5,980	...
lmes	27,473	25,271	2,202
ian River	156	156	...
kson	42,570	34,841	7,729
ferson	21,589	18,164	3,425
ayette	14,811	14,811	...
Lake	6,050	5,963	87
Lee	5,184	5,184	...
Leon	22,985	22,558	427
Levy	46,898	46,735	163
Liberty	15,696	14,420	1,276
Madison	58,362	55,955	2,407
Manatee	2,706	2,706	..
Marion	92,824	81,876	10,948
Martin	461	461	...
Nassau	94,491	88,292	6,199
Okaloosa	19,365	19,083	282
Okeechobee	622	622	..
Orange	5,508	5,486	22
Osceola	16,441	16,441	...
Palm Beach	2,851	2,851	
Pasco	6,127	6,127	.
Pinellas	257	257	.
Polk	9,820	9,787	33
Putnam	77,318	60,318	17,000
St. Johns	72,998	68,990	4,008
St. Lucie	2,632	2,632	
Santa Rosa	90,649	90,138	511
Sarasota	6,021	6,021	
Seminole	12,392	12,392	.
Sumter	5,222	5,048	174
Suwannee	24,629	24,025	604
Taylor	74,012	72,177	1,835
Union	43,517	43,494	23
Volusia	53,075	53,075	.
Wakulla	28,770	27,662	1,108
Walton	45,301	44,076	1,225
Washington	27,805	26,381	1,424
All counties	1,979,341	1,882,574	96,767

Table 13. *Round pulpwood production in Georgia, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Appling	98,032	94,690	3,342
Atkinson	61,474	59,806	1,668
Bacon	46,015	45,455	560
Baker	5,611	5,426	185
Baldwin	31,016	29,586	1,430
Banks	1,373	1,373	
Barrow	9,634	9,634	.
Bartow	19,367	16,702	2,665
Ben Hill	16,762	15,920	842
Berrien	38,744	35,291	3,453
Bibb	18,508	14,635	3,873
Bleckley	7,227	6,729	498
Brantley	69,203	61,304	7,899
Brooks	13,463	13,368	95
Bryan	68,135	56,776	11,359
Bulloch	31,996	29,649	2,347
Burke	24,212	23,812	400
Butts	22,912	22,782	130
Calhoun	7,186	6,331	855
Camden	143,347	105,716	37,631
Candler	8,899	8,092	807
Carroll	31,850	31,850	
Catoosa	2,236	2,220	16
Charlton	104,381	97,300	7,081
Chatham	17,221	11,645	5,576
Chattahoochee	17,149	17,017	132
Chattooga	8,932	7,604	1,328
Cherokee	16,081	15,983	98
Clarke	3,485	3,485	. . .
Clay	9,502	8,045	1,457
Clayton	7,387	7,387	. .
Clinch	113,803	113,541	262
Cobb	15,083	15,060	23
Coffee	61,704	59,473	2,231
Colquitt	37,537	35,259	2,278
Columbia	17,520	15,996	1,524
Cook	9,741	9,480	261
Coweta	36,476	36,347	129
Crawford	16,502	14,817	1,685
Crisp	10,082	9,882	200
Dade	461	453	8
Dawson	2,432	2,432	. .
Decatur	47,253	39,843	7,410
De Kalb	4,430	4,389	41
Dodge	54,148	44,558	9,590
Dooly	13,924	12,888	1,036
Dougherty	26,318	26,289	29
Douglas	33,285	33,130	155
Early	12,242	11,365	877
Echols	20,164	19,919	245
Effingham	44,138	33,018	11,120
Elbert	36,259	30,158	6,101
Emanuel	33,393	31,846	1,547
Evans	13,016	12,297	719
Fannin	6,910	5,134	1,776
Fayette	23,809	22,760	1,049
Floyd	30,312	26,234	4,078
Forsyth	9,132	9,132	. . .
Franklin	15,829	15,829	. . .
Fulton	12,263	12,260	3
Gilmer	5,569	5,566	3
Glascock	100	100	. . .
Glynn	56,860	42,192	14,668
Gordon	11,825	10,387	1,438
Grady	29,120	24,009	5,111
Greene	41,353	37,971	3,382
Gwinnett	36,296	36,296	. . .
Habersham	7,524	6,057	1,467
Hall	15,272	15,272	. . .
Hancock	55,222	53,744	1,478
Haralson	12,163	11,906	257
Harris	87,709	86,965	744
Hart	5,345	5,345	. . .
Heard	17,321	17,276	45
Henry	21,435	21,261	174
Houston	42,150	38,394	3,756
Irwin	7,961	7,741	220
Jackson	17,175	17,175	. . .
Jasper	58,747	53,813	4,934
Jeff Davis	55,195	52,388	2,807
Jefferson	17,788	16,920	868
Jenkins	13,894	12,394	1,500
Johnson	5,250	5,104	146
Jones	61,699	57,141	4,558
Lamar	20,138	19,679	459
Lanier	19,314	17,955	1,359
Laurens	30,401	25,927	4,474
Lee	4,703	4,665	38
Liberty	59,784	30,212	29,572
Lincoln	5,579	5,579	. . .
Long	43,826	38,364	5,462
Lowndes	43,102	41,153	1,949
Lumpkin	6,734	6,734	. .
McDuffie	14,967	14,467	500
McIntosh	49,225	38,795	10,430
Macon	8,646	8,203	443
Madison	6,892	6,864	28
Marion	14,417	13,766	651
Meriwether	31,455	30,671	784
Miller	14,147	14,057	90
Mitchell	14,188	13,126	1,062
Monroe	83,223	78,244	4,979
Montgomery	22,933	20,212	2,721
Morgan	35,378	32,102	3,276
Murray	12,452	11,227	1,225
Muscogee	15,157	14,737	420
Newton	38,272	36,630	1,642
Oconee	18,969	18,833	136
Oglethorpe	16,935	16,935	. . .
Paulding	24,603	24,603	. . .
Peach	20,260	19,152	1,108
Pickens	7,620	7,620	. . .
Pierce	77,113	75,857	1,256
Pike	10,013	10,009	4
Polk	16,353	15,557	796
Pulaski	6,061	5,679	382
Putnam	48,055	46,219	1,836
Quitman	12,063	11,243	820
Rabun	11,859	3,251	8,608
Randolph	10,998	10,536	462
Richmond	12,422	12,252	170
Rockdale	2,657	2,657	. . .
Schley	8,338	7,043	1,295
Screven	20,411	14,104	6,307
Seminole	21,247	18,643	2,604
Spalding	16,264	15,768	496
Stephens	4,947	4,947	. .
Stewart	59,884	59,387	497
Sumter	17,541	17,267	274
Talbot	42,598	40,657	1,941
Taliaferro	11,588	11,470	118
Tattnall	39,358	36,613	2,745
Taylor	10,923	10,743	180

Table 13. *Round pulpwood production in Georgia, 1959 (Continued)*

County	All species	Pine	Hardwood
	Standard cords		
elfair	55,589	48,592	6,997
errell	4,297	4,297	
homas	22,728	20,982	1,746
ift	16,768	15,474	1,294
oombs	34,140	29,098	5,042
reutlen	16,834	15,749	1,085
roup	58,801	56,543	2,258
urner	3,795	3,696	99
wiggs	37,601	34,514	3,087
nion	1,449	1,374	75
pson	33,980	33,785	195
alker	8,725	8,471	254
Walton	6,619	6,561	58
Ware	130,319	128,585	1,734
Warren	19,880	19,730	150
Washington	43,701	41,599	2,102
Wayne	108,823	102,123	6,700
Webster	10,849	10,846	3
Wheeler	42,835	39,111	3,724
White	2,086	2,086	
Whitfield	13,208	11,603	1,605
Wilcox	27,273	25,562	1,711
Wilkes	37,470	35,893	1,577
Wilkinson	54,806	52,626	2,180
Worth	15,431	14,921	510
All counties	4,354,499	4,009,054	345,445

Table 14. *Round pulpwood production in Louisiana, 1959*

Parish	All species	Pine	Hardwood
	Standard cords		
cadia	4,769	4,584	185
llen	34,070	30,784	3,286
scension	251		251
voyelles	1,729	1,335	394
eauregard	19,202	17,649	1,553
ienville	87,288	79,393	7,895
ossier	54,699	44,226	10,473
addo	30,725	10,060	20,665
alcasieu	10,385	10,050	335
aldwell	40,829	36,110	4,719
atahoula	12,060	7,179	4,881
laiborne	70,359	64,068	6,291
oncordia	13,066		13,066
e Soto	57,136	54,190	2,946
ast Baton Rouge	4,865	536	4,329
ast Carroll	5,790		5,790
ast Feliciana	24,728	15,816	8,912
vangeline	8,580	8,211	369
anklin	3,083	1,206	1,877
rant	36,501	30,280	6,221
erville	769		769
ckson	77,179	69,130	8,049
fferson	42		42
fferson Davis	1,404	1,173	231
Salle	40,546	35,455	5,091
ncoln	42,209	36,543	5,666
vingston	89,172	83,213	5,959
Madison	9,209	164	9,045
Morehouse	34,344	16,847	17,497
Natchitoches	74,023	58,100	15,923
Orleans	6		6
Ouachita	33,304	23,340	9,964
Pointe Coupee	1,846		1,846
Rapides	52,744	40,123	12,621
Red River	25,571	19,485	6,086
Richland	84		84
Sabine	62,401	59,128	3,273
St. Helena	18,971	12,275	6,696
St. James	573		573
St. John the Baptist	547		547
St. Landry	437	197	240
St. Mary	15		15
St. Tammany	40,476	40,067	409
Tangipahoa	50,450	41,365	9,085
Tensas	14,497		14,497
Union	130,895	98,552	32,343
Vernon	41,453	39,649	1,804
Washington	85,265	78,133	7,132
Webster	43,636	32,111	11,525
West Baton Rouge	3,871		3,871
West Carroll	994	7	987
West Feliciana	7,223	1,338	5,885
Winn	107,791	95,277	12,514
All parishes	1,612,062	1,297,349	314,713

Table 15. *Round pulpwood production in Mississippi, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Adams	33,200	3,420	29,780
Alcorn	2,740	2,545	195
Amite	35,610	18,601	17,009
Attala	26,513	9,582	16,931
Benton	1,031	907	124
Bolivar	3,079		3,079
Calhoun	1,425	452	973
Carroll	14,433	2,056	12,377
Chickasaw	2,175	977	1,198
Choctaw	12,904	4,996	7,908
Claiborne	41,301	7,630	33,671
Clarke	98,513	48,484	50,029
Clay	2,482	246	2,236
Copiah	54,850	29,250	25,600
Covington	32,009	20,267	11,742
De Soto	602		602
Forrest	31,390	19,319	12,071
Franklin	42,976	24,449	18,527
George	30,520	23,503	7,017
Greene	56,637	36,285	20,352
Grenada	4,408	338	4,070
Hancock	37,811	34,859	2,952
Harrison	31,819	29,898	1,921
Hinds	38,076	13,150	24,926
Holmes	20,554	4,231	16,323
Humphreys	5,178		5,178
Issaquena	4,632		4,632
Itawamba	244	244	
Jackson	45,477	41,310	4,167
Jasper	95,162	62,805	32,357
Jefferson	33,496	14,892	18,604
Jefferson Davis	10,619	7,172	3,447
Jones	71,014	42,863	28,151
Kemper	50,152	35,043	15,109
Lafayette	8,318	711	7,607
Lamar	19,734	14,323	5,411
Lauderdale	56,163	34,930	21,233
Lawrence	39,185	21,390	17,795
Leake	42,991	21,681	21,310
Lee	59	36	23
Leflore	6,077	10	6,067
Lincoln	49,462	32,072	17,390
Lowndes	5,346	4,066	1,280
Madison	19,181	7,582	11,599
Marion	57,615	27,785	29,830
Marshall	6,652	2,707	3,945
Monroe	3,850	3,215	635
Montgomery	7,854	1,559	6,295
Neshoba	35,083	15,311	19,772
Newton	47,328	29,723	17,605
Noxubee	12,231	9,259	2,972
Oktibbeha	5,738	2,351	3,387
Panola	3,014	14	3,000
Pearl River	35,270	22,151	13,119
Perry	27,449	20,870	6,579
Pike	39,510	25,754	13,756
Pontotoc	5,223	4,558	665
Prentiss	2,695	2,237	458
Quitman	1,025	...	1,025
Rankin	46,657	31,701	14,956
Scott	31,904	22,589	9,315
Sharkey	2,462	...	2,462
Simpson	34,379	18,888	15,491
Smith	29,890	18,413	11,477
Stone	26,387	17,988	8,399
Sunflower	571	...	571
Tallahatchie	4,651	483	4,168
Tippah	115	...	115
Tishomingo	5,480	5,480	...
Tunica	3,401	...	3,401
Union	5,786	3,831	1,955
Walthall	17,532	10,426	7,106
Warren	32,305	568	31,737
Washington	11,319	...	11,319
Wayne	43,148	21,827	21,321
Webster	12,775	5,803	6,972
Wilkinson	17,643	6,327	11,316
Winston	26,718	15,294	11,424
Yalobusha	7,164	524	6,640
Yazoo	5,172	83	5,089
All counties	1,875,544	1,024,294	851,250

able 16. *Round pulpwood production in North Carolina, 1959*

County	All species	Pine	Hardwood
	Standard cords		
lamance	3,099	2,890	209
lexander	1,986	1,986	
nson	46,523	36,157	10,366
she	14		14
very	431		431
eaufort	54,534	43,798	10,736
rtie	18,226	16,049	2,177
aden	64,867	48,087	16,780
unswick	88,547	77,593	10,954
ncombe	60,041	22,154	37,887
rke	16,381	15,043	1,338
barrus	6,384	6,283	101
ldwell	14,287	11,411	2,876
mden	10,123	8,652	1,471
rteret	30,631	29,955	676
swell	2,423	2,423	
tawba	2,835	2,741	94
atham	33,007	25,759	7,248
erokee	35,955	25,481	10,474
owan	4,130	3,792	338
eveland	6,977	6,966	11
lumbus	47,311	38,191	9,120
aven	56,192	46,819	9,373
mberland	13,789	11,378	2,411
rrituck	2,625	1,886	739
re	8	8	
vidson	3,453	3,432	21
vie	4,383	4,049	334
plin	24,308	22,456	1,852
rham	14,746	14,667	79
gecombe	11,608	10,504	1,104
rsyth	7,242	7,133	109
anklin	59,252	48,826	10,426
ston	17,897	16,566	1,331
tes	24,720	17,695	7,025
aham	1,685	689	996
anville	12,590	12,325	265
eene	1,222	1,184	38
ilford	12,405	8,993	3,412
lifax	37,573	37,311	262
rnett	15,988	15,036	952
ywood	15,261	1,943	13,318
nderson	28,973	6,453	22,520
rtford	8,973	7,274	1,699
ke	1,556	1,164	392
de	22,184	18,321	3,863
dell	42,309	24,901	17,408
kson	43,023	8,069	34,954
nston	14,421	12,877	1,544
es	19,002	18,034	968
Lee	10,296	8,766	1,530
Lenoir	10,166	10,166	
Lincoln	4,584	4,352	232
McDowell	14,423	10,557	3,866
Macon	16,663	4,489	12,174
Madison	7,624	4,098	3,526
Martin	24,549	21,549	3,000
Mecklenburg	27,337	21,302	6,035
Mitchell	252		252
Montgomery	19,111	17,618	1,493
Moore	28,660	23,902	4,758
Nash	17,799	13,148	4,651
New Hanover	13,718	13,482	236
Northampton	14,718	14,718	
Onslow	70,581	69,404	1,177
Orange	4,751	4,062	689
Pamlico	7,722	6,654	1,068
Pasquotank	294	212	82
Pender	48,249	40,724	7,525
Perquimans	1,811	1,811	
Person	10,144	10,125	19
Pitt	35,849	31,715	4,134
Polk	15,704	5,158	10,546
Randolph	3,934	3,762	172
Richmond	23,611	18,564	5,047
Robeson	43,108	34,761	8,347
Rockingham	9,387	9,387	
Rowan	4,217	4,217	
Rutherford	18,425	9,649	8,776
Sampson	41,895	35,757	6,138
Scotland	5,630	4,692	938
Stanly	5,456	5,035	421
Stokes	1,507	1,507	
Surry	15,420	15,420	
Swain	8,296	4,529	3,767
Transylvania	18,553	2,049	16,504
Tyrrell	24,550	19,473	5,077
Union	14,281	12,408	1,873
Vance	9,209	6,908	2,301
Wake	41,321	36,169	5,152
Warren	34,984	28,141	6,843
Washington	7,925	3,248	4,677
Watauga	36		36
Wayne	16,870	16,192	678
Wilkes	4,287	4,287	
Wilson	10,056	9,883	173
Yancey	11		11
All counties	1,834,074	1,429,454	404,620

Table 17. *Round pulpwood production in Oklahoma, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Adair	31	31	...
Choctaw	1,179	1,179	
Latimer	490	490	
Le Flore	6,909	6,909	
McCurtain	16,511	16,299	212
Mayes	8,816		8,816
Pushmataha	4,161	4,161	...
All counties	38,097	29,069	9,028

Table 18. *Round pulpwood production in South Carolina, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Abbeville	42,531	40,051	2,480
Aiken	34,725	30,873	3,852
Allendale	34,539	25,671	8,868
Anderson	35,388	34,653	735
Bamberg	19,107	10,247	8,860
Barnwell	11,069	8,964	2,105
Beaufort	19,539	17,117	2,422
Berkeley	57,312	44,913	12,399
Calhoun	7,033	5,760	1,273
Charleston	46,062	36,579	9,483
Cherokee	15,729	15,449	280
Chester	60,888	50,687	10,201
Chesterfield	49,894	20,491	29,403
Clarendon	19,127	10,940	8,187
Colleton	66,420	49,960	16,460
Darlington	31,410	13,122	18,288
Dillon	10,836	7,036	3,800
Dorchester	37,231	26,926	10,305
Edgefield	64,555	55,288	9,267
Fairfield	127,247	112,452	14,795
Florence	30,377	21,242	9,135
Georgetown	85,473	60,251	25,222
Greenville	16,111	15,905	206
Greenwood	38,268	36,453	1,815
Hampton	34,699	23,002	11,697
Horry	33,494	27,916	5,578
Jasper	42,933	32,960	9,97
Kershaw	69,803	46,164	23,63
Lancaster	49,974	44,208	5,76
Laurens	42,335	38,643	3,69
Lee	18,823	6,933	11,89
Lexington	18,112	16,003	2,10
McCormick	27,134	26,446	68
Marion	16,058	13,312	2,74
Marlboro	15,636	7,726	7,91
Newberry	76,118	66,730	9,38
Oconee	22,302	19,969	2,33
Orangeburg	34,063	20,919	13,14
Pickens	9,259	7,931	1,32
Richland	44,095	30,177	13,91
Saluda	20,013	18,632	1,38
Spartanburg	40,451	34,999	5,45
Sumter	22,024	13,640	8,38
Union	46,927	43,079	3,84
Williamsburg	28,435	17,823	10,61
York	36,363	33,833	2,53
All counties	1,709,922	1,342,075	367,84

able 19. *Round pulpwood production in Tennessee, 1959*

County	All species	Pine	Hardwood
	Standard cords		
nderson	7,022	5,955	1,067
enton	2,162	2,162	
ledsoe	3,194	1,896	1,298
lount	9,725	8,683	1,042
radley	11,540	7,868	3,672
ampbell	4,227	2,677	1,550
arroll	93	93	
arter	6,538		6,538
ester	601	601	
aiborne	5,167	3,686	1,481
cke	13,952	12,165	1,787
umberland	17,760	4,457	13,303
ecatur	509	509	
ntress	8,305	7,681	624
ainger	1,745	1,157	588
eene	11,420	5,338	6,082
undy	1,802	1,802	
amblen	685	416	269
amilton	8,691	7,240	1,451
ancock	638	453	185
rdeman	2,714	2,714	
rdin	47	47	
wkins	16,534	5,583	10,951
nderson	3,639	3,639	
ckman	89	89	
fferson	124	117	7
hnson	1,812		1,812
Knox	8,000	6,718	1,282
Lewis	27	27	
Loudon	1,293	707	586
McMinn	27,251	14,977	12,274
McNairy	3	3	
Madison	57	57	
Marion	4,157	4,157	
Meigs	8,963	5,790	3,173
Monroe	31,387	19,486	11,901
Morgan	27,748	7,383	20,365
Overton	1,135	1,135	
Polk	15,456	11,415	4,041
Putnam	582	536	46
Rhea	11,708	6,672	5,036
Roane	6,526	3,627	2,899
Scott	10,031	6,651	3,380
Sequatchie	1,499	1,430	69
Sevier	8,128	7,886	242
Shelby	5,066		5,066
Sullivan	12,686	18	12,668
Unicoi	2,449		2,449
Union	6,375	5,801	574
Van Buren	473	473	
Warren	1,419	1,419	
Washington	12,410	6,949	5,461
White	513	473	40
All counties	346,077	200,818	145,259

ble 20. *Round pulpwood production in Texas, 1959*

County	All species	Pine	Hardwood
	Standard cords		
derson	13,067	10,342	2,725
gelina	51,485	50,499	986
stin	160	114	46
strop	450	450	
wie	12,549	12,549	
azos	38		38
rleson	491	27	464
mp	4,447	3,321	1,126
ss	31,181	28,146	3,035
ambers	1,828	999	829
erokee	36,579	34,209	2,370
orado	587	226	361
ls	1,305		1,305
t Bend	591		591
nklin	839	833	6
egg	8,665	7,769	896
mes	13,527	13,115	412
din	46,877	31,802	15,075
ris	37,601	20,968	16,633
rison	33,550	27,632	5,918
nderson	629	629	
uston	39,897	35,327	4,570
per	71,494	52,953	18,541
ferson	1,580	513	1,067
erty	56,464	36,677	19,787
ennan	683		683
Madison	139		139
Marion	22,622	17,406	5,216
Montgomery	53,845	38,145	15,700
Morris	8,761	7,426	1,335
Nacogdoches	55,814	54,315	1,499
Newton	50,974	31,733	19,241
Orange	4,701	2,368	2,333
Panola	25,881	23,974	1,907
Polk	63,332	49,009	14,323
Red River	8,289	8,289	
Robertson	65		65
Rusk	27,867	26,307	1,560
Sabine	41,784	35,956	5,828
San Augustine	46,029	36,825	9,204
San Jacinto	13,405	10,220	3,185
Shelby	64,836	55,475	9,361
Smith	14,074	12,335	1,739
Titus	856	821	35
Trinity	35,457	33,476	1,981
Tyler	41,383	28,576	12,807
Upshur	28,659	26,553	2,106
Walker	40,010	34,353	5,657
Waller	421	43	378
Washington	656		656
Wood	3,624	3,624	
All counties	1,120,048	906,329	213,719

Table 21. *Round pulpwood production in Virginia, 1959*

County	All species	Pine	Hardwood
	Standard cords		
Accomack	7,962	7,962	
Albemarle	22,850	20,454	2,396
Alleghany	49,118	9,762	39,356
Amelia	21,451	19,001	2,450
Amherst	61,759	28,344	33,415
Appomattox	50,127	26,023	24,104
Arlington	24	24	
Augusta	14,774	7,755	7,019
Bath	44,565	4,167	40,398
Bedford	52,123	38,433	13,690
Bland	4	4	
Botetourt	22,986	9,818	13,168
Brunswick	81,429	67,197	14,232
Buckingham	63,640	45,881	17,759
Campbell	54,628	48,156	6,472
Caroline	25,285	24,832	453
Carroll	770	770	
Charles City	27,063	18,881	8,182
Charlotte	20,436	19,212	1,224
Chesterfield	23,830	19,547	4,283
Clarke	130	130	
Craig	24,507	12,007	12,500
Culpeper	7,703	6,302	1,401
Cumberland	15,582	14,981	601
Dinwiddie	35,809	31,442	4,367
Elizabeth City	6	6	
Essex	13,562	13,562	
Fairfax	6,194	6,194	
Fauquier	2,856	2,850	6
Floyd	390	390	
Fluvanna	21,518	18,871	2,647
Franklin	29,241	28,996	245
Frederick	13,827	12,846	981
Giles	241	16	225
Gloucester	15,090	13,681	1,409
Goochland	30,724	28,338	2,386
Greene	3,580	3,546	34
Greensville	34,428	29,684	4,744
Halifax	23,512	23,369	143
Hanover	15,244	14,813	431
Henrico	6,839	6,820	19
Henry	21,280	21,061	219
Highland	12,650	901	11,749
Isle of Wight	17,918	10,927	6,991
James City	10,522	9,248	1,274
King and Queen	26,351	25,077	1,274
King George	17	17	
King William	19,304	18,083	1,221
Lancaster	11,815	11,815	
Lee	994		994
Loudoun	92	92	
Louisa	16,985	16,780	205
Lunenburg	19,294	17,249	2,045
Madison	2,777	2,773	4
Mathews	2,443	2,443	
Mecklenburg	23,990	21,693	2,297
Middlesex	9,198	9,155	43
Montgomery	1,726	1,726	
Nansemond	12,958	8,081	4,877
Nelson	26,518	18,217	8,301
New Kent	27,830	26,602	1,228
Norfolk	324	296	28
Northampton	297	297	
Northumberland	7,503	7,503	
Nottoway	34,043	28,980	5,063
Orange	11,067	9,432	1,635
Page	664	627	37
Patrick	2,281	2,281	
Pittsylvania	33,846	31,986	1,860
Powhatan	10,838	10,785	53
Prince Edward	34,107	32,363	1,744
Prince George	37,342	30,436	6,906
Prince William	19,208	18,574	634
Rappahannock	446	446	
Richmond	9,992	9,992	
Roanoke	3,786	3,786	
Rockbridge	37,644	9,376	28,268
Rockingham	4,989	2,961	2,028
Russell	736		736
Scott	17,375	39	17,336
Shenandoah	5,184	5,184	
Smyth	2	2	
Southampton	42,865	31,094	11,771
Spotsylvania	15,909	15,161	748
Stafford	9,650	9,650	
Surry	18,751	12,217	6,534
Sussex	36,144	29,634	6,510
Warren	2,862	2,432	430
Warwick	470	452	18
Washington	9,161	4,180	4,981
Westmoreland	11,671	11,671	
Wise	696		696
Wythe	5,313	5,313	
York	8,193	7,649	544
All counties	1,643,828	1,241,806	402,022

able 22. *Companies drawing pulpwood from the South, 1959*

State d plant cation	Name of company and map code[1]	Pulp capacity 24 hours[2]
		Tons
LABAMA		
rewton	(1) Container Corp. of America	300
oosa Pines	(2) Coosa River Newsprint Co.	600
emopolis	(3) Gulf States Paper Corp.	400
uscaloosa	(4) Gulf States Paper Corp.	400
obile	(5) International Paper Co.	1,290
aheola	(6) Marathon Southern Corp.	315
obile	(7) National Gypsum Co.	300
obile	(8) The Ruberoid Co.	48
obile	(9) Scott Paper Co.	550
KANSAS		
rossett	(10) The Crossett Co.	625
ine Bluff	(11) Dierks Paper Co.	150
amden	(12) International Paper Co.	615
ine Bluff	(13) International Paper Co.	895
ORIDA		
ensacola	(14) Armstrong Cork Co.	130
oley	(15) The Buckeye Cellulose Corp.	600
ernandina	(16) Container Corp. of America	600
alatka	(17) Hudson Pulp and Paper Corp.	850
anama City	(18) International Paper Co.	1,620
acksonville	(19) Owens-Illinois Glass Co.	500
ernandina	(20) Rayonier, Inc.	350
ort St. Joe	(21) St. Joe Paper Co.	1,200
acksonville	(22) St. Regis Paper Co.	1,500
ensacola	(23) St. Regis Paper Co.	750
ORGIA		
acon	(24) Armstrong Cork Co.	200
runswick	(25) Brunswick Pulp and Paper Co.	460
avannah	(26) Certain-teed Products Corp.	60
avannah	(27) Continental Can Co.	600
acon	(28) Georgia Kraft Co.	675
aldosta	(29) Owens-Illinois Glass Co.	630
sup	(30) Rayonier, Inc.	675
ome	(31) Rome Kraft Co.	725
. Marys	(32) St. Marys Kraft Corp.	800
vannah	(33) Union Bag-Camp Paper Corp.	2,050
UISIANA		
reveport	(34) Bird and Son	60
izabeth	(35) Calcasieu Paper Co.	240
odge	(36) Continental Can Co., Inc.	580
ew Orleans	(37) Flintkote Co.	60
galusa	(38) Gaylord Container Corp.	1,175
astrop	(39) International Paper Co. (Bastrop Mill)	590
strop	(40) International Paper Co. (Louisiana Mill)	595
ringhill	(41) International Paper Co.	1,420
est Monroe	(42) Olin Mathieson Chemical Corp.	650
Francisville	(43) St. Francisville Paper Corp.	235
RYLAND		
ke	(44) West Virginia Pulp and Paper Co.	425
MISSISSIPPI		
Meridian	(45) Flintkote Co.	132
Moss Point	(46) International Paper Co.	650
Natchez	(47) International Paper Co.	900
Natchez	(48) Johns-Manville Products Corp.	350
Laurel	(49) Masonite Corp.	800
Greenville	(50) United States Gypsum Co.	240
NORTH CAROLINA		
Canton	(51) Champion Paper and Fibre Co.	980
Roanoke Rapids	(52) Halifax Paper Co.	500
Sylva	(53) The Mead Corp.	225
Plymouth	(54) North Carolina Pulp Co.	1,450
Acme	(55) Riegel Carolina Corp.	680
OHIO		
Circleville	(56) Container Corp. of America	110
Chillicothe	(57) The Mead Corp.	210
OKLAHOMA		
Pryor	(58) Bestwall Gypsum Co.	90
PENNSYLVANIA		
York Haven	(59) International Paper Co.	65
Spring Grove	(60) P. H. Glatfelter Co.	190
SOUTH CAROLINA		
Catawba	(61) Bowaters Carolina Corp.	400
Georgetown	(62) International Paper Co.	1,990
Hartsville	(63) Sonoco Products Co.	590
Charleston	(64) West Virginia Pulp and Paper Co.	1,350
TENNESSEE		
Calhoun	(65) Bowaters Southern Paper Corp.	1,375
Harriman	(66) The Mead Corp.	112
Kingsport	(67) The Mead Corp.	240
Knoxville	(68) Southern Extract Co.	105
TEXAS		
Pasadena	(69) Champion Paper and Fibre Co.	650
Evadale	(70) East Texas Pulp and Paper Co.	415
Dallas	(71) The Ruberoid Co.	60
Diboll	(72) Southern Pine Lumber Co.	130
Lufkin	(73) Southland Paper Mills	1,150
VIRGINIA		
West Point	(74) Chesapeake Corp. of Virginia	675
Hopewell	(75) Continental Can Co.	700
Columbia	(76) James River Pulp Corp.	25
Lynchburg	(77) The Mead Corp.	175
Big Island	(78) Owens-Illinois Glass Co.	175
Jarratt	(79) Southern Johns-Manville Products Corp.	200
Franklin	(80) Union Bag-Camp Paper Co.	600
Covington	(81) West Virginia Pulp and Paper Co.	930

---

[1] rresponds to numbers at mill locations in fig. 7.

[2] **uthern Pulp and Paper Manufacturer**, vol. 22, no. 10 (Oct. 1, 1959); and other sources.

Table 23. *Pulpmills under construction or announced in the South*

State and plant location	Name of company and map code[1]	Pulp capacity 24 hrs.[2]
		Tons
FLORIDA		
Port St. Joe	(82) Florida Gulf Fibre Co.	450
GEORGIA		
Augusta	(83) Continental Can Co.	350
Manchester	(84) Southern Land, Timber, and Pulp Corp.	400
LOUISIANA		
Baton Rouge	(85) Noralyn Paper Mills, Inc.	150
MISSISSIPPI		
Lumberton	(86) Lumberton Pulp Co.	100
SOUTH CAROLINA		
Catawba	(87) Bowaters Board Co.	175
TENNESSEE		
Counce	(88) Tennessee River Pulp and Paper Co.	500

[1] Corresponds to numbers at mill locations in fig. 7.

[2] Southern Pulp and Paper Manufacturer, vol. 22, no. 10 (Oct. 1, 1959); and other sources.

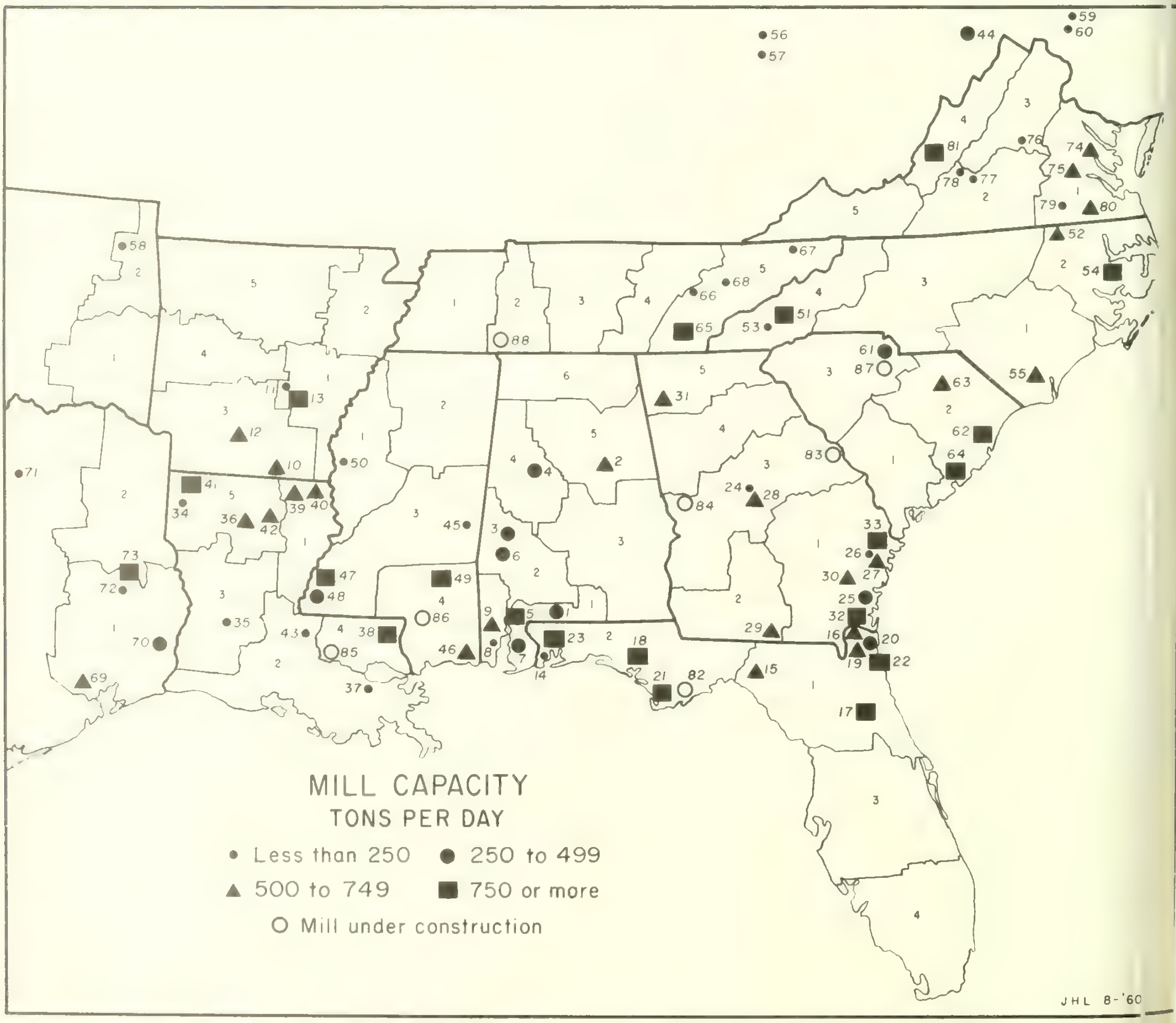


Figure 7. *Pulpmills drawing wood from the South, 1959. Numbered areas are Forest Survey regions. Small numbers at mill locations correspond to numbers in tables 22 and 23.*

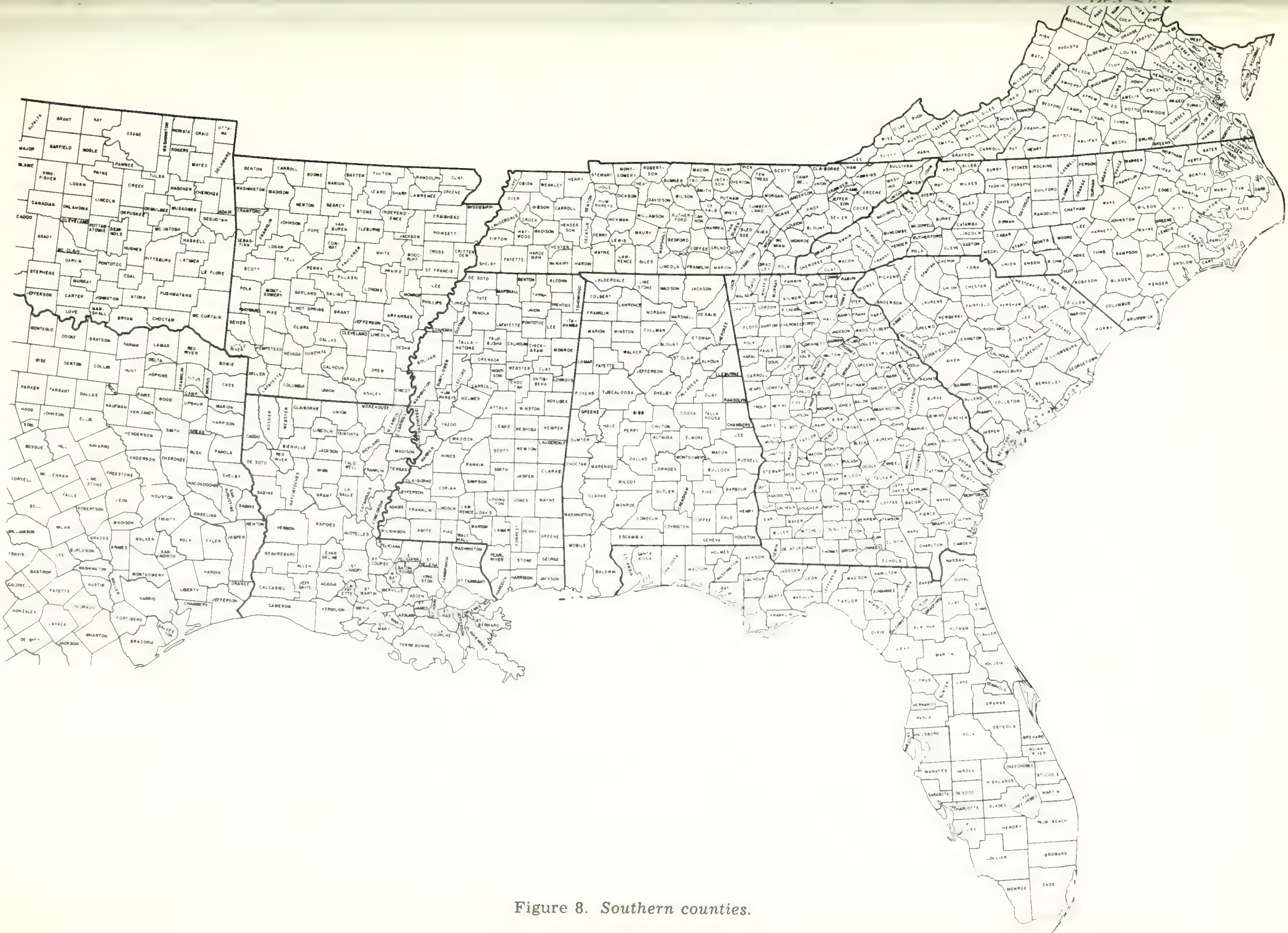


Figure 8. Southern counties.

57

FOREST SURVEY RELEASE NO. 57

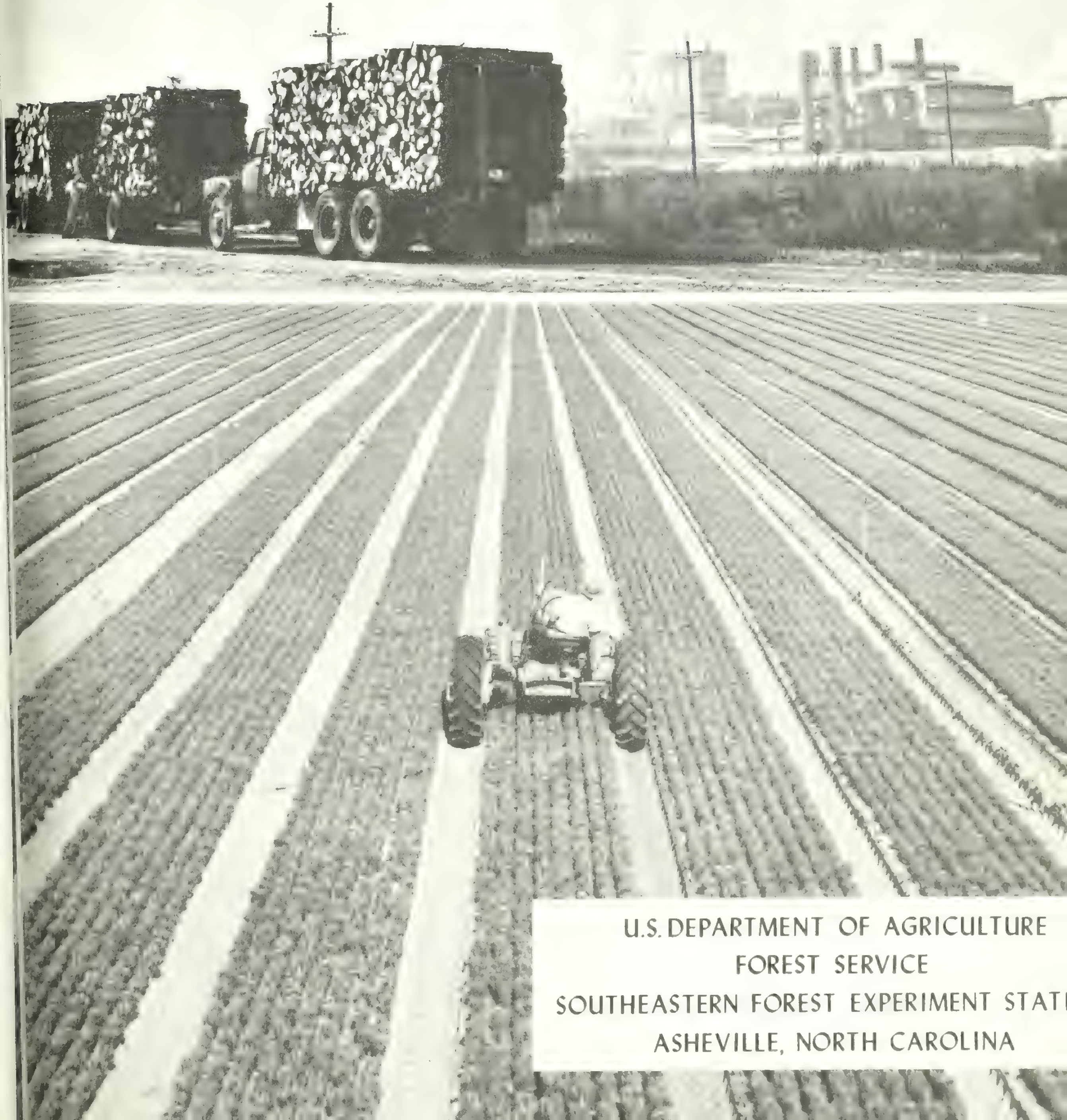
MAY 1961

FLORIDA'S TIMBER

by

Robert W. Larson and Marcus H. Goforth

CLEMSON COLLEGE LIBRARY
JUN 5 - 1961
AGRI. REF. DEPT.



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATI
ASHEVILLE, NORTH CAROLINA

ACKNOWLEDGMENTS

The Forest Survey of Florida represents the combined efforts of many people. Cooperation in the form of money, field men, and equipment reduced substantially the time required to collect the field data. The Southeastern Station wishes to acknowledge the cooperation of the Florida Forest Service and private companies in making the services of the following men available to help collect the field data:

Kenneth Jorishie, Gair Woodlands Corporation
John M. Smith, International Paper Company
E. K. Ayres, St. Joe Paper Company
J. D. Penn, St. Regis Paper Company
Paul H. Bourns, Florida Forest Service
Ralph L. Corbett, Florida Forest Service
William R. Helm, Florida Forest Service
Forrest W. Howard, Florida Forest Service
Carroll W. Purvis, Florida Forest Service

The Station also gratefully acknowledges financial assistance provided by the following companies:

Buckeye Cellulose Corporation
Hudson Pulp and Paper Company
Owens-Illinois Glass Company

The Forest Survey is part of a continuing nationwide inventory of timber resources conducted by the U. S. Forest Service. In the southeastern states, it is a function of the Division of Forest Economics Research of the Southeastern Forest Experiment Station under the direction of the late J. F. McCormack.

Mackay B. Bryan organized and directed the Florida Forest Survey and Joe P. McClure supervised the collection of the field data. Ronald C. Froelich supervised the survey of timber products cut from Florida timber. Land-use interpretation of aerial photos was made by William H. B. Haines.

Agnes C. Nichols supervised the office compilations and Hilda J. Brown and Mercina P. McSwain typed the detailed statistical tables.

HIGHLIGHTS

The timber supply outlook has changed considerably during the 24 years since the first Forest Survey was completed in 1936. Today, Florida has 11 percent less commercial forest land, about the same volume of pine timber, but nearly a third more volume in cypress and hardwood trees, mainly small and of low value.

Today's timber, especially the pine timber, is on the average smaller. The volume of all species of sawtimber has been greatly reduced since 1936, but this was offset by a big increase in small timber.

There are 5.5 million fewer acres growing pine, but the area still qualifying as pine type is much better stocked. In fact, this increase in pine stocking more than offset the loss of area in pine and oak-pine type. The volume of pine growth is almost a third greater, even though pine inventory remained essentially unchanged. This increase in growth reflects the upsurge in young timber, mainly in response to better fire protection.

In the past, most of the increase in pine stocking resulted from natural regeneration. Today, the natural regeneration outlook is not nearly so favorable. Hardwoods are increasing twice as fast as pine and are taking over more and more of the land that formerly grew pine.

In the future, an increasing amount of the timber cut will have to come from planted stands. About half of Florida's forest land is poorly stocked and not expected to restock naturally with desirable timber. Also, each year 61 percent or about 300,000 acres of the pine area cut over is left poorly stocked, with little prospect of restocking naturally to pine.

The current stepped-up planting activity promises to go a long way toward putting these idle acres to work. During the 1958-1959 planting season nearly 200 million trees were planted. With adequate protection and conservative cutting, in 30 years growth from plantations alone will be more than enough to replace the current cut. But this increase in growth will occur only if cutting for the State as a whole is not allowed to exceed the total growth — especially during the next 10 years.

During the past 10 years, cutting on the average slightly exceeded pine growth and has been somewhat more intensive in relation to growth than during the preceding 14 years. The intensity of cutting, however, appears to have fallen off during the past few years. Pine growing stock cut in 1958 was 25 percent below net growth and indications are that the 1959 and 1960 cut was also less than the growth.

A continuation of this favorable growth-and-cut relationship for another four or five years will go a long way toward building up Florida's timber resources. However, plans for the expansion of forest industry to utilize surplus pine growth that

may develop within the next few years should proceed with caution. Much of this surplus growth is on land owned by public agencies, pulp companies, and forest industries that are attempting to increase productivity by building up the growing stock. During the past 10 years the forest land held by other owners has been badly overcut, and this class of ownership includes 66 percent of the total forest area. Until productivity can be built up, expansion of forest industries dependent upon these "other" lands for pine timber should be discouraged.

Florida offers excellent opportunities for industries that can use low-value hardwoods and small cypress. Growth of this type of timber is well in excess of the cut. Much of it is on land better suited to growing pine and should be cut to make room for pine.

CONTENTS

Page

Changes in the timber supply - - - - - - - - - - - - - - - - - - 1

  Less land to grow timber - - - - - - - - - - - - - - - - - - 1
  Less land growing pine - - - - - - - - - - - - - - - - - - 2
  Better pine stocking - - - - - - - - - - - - - - - - - - - 2
  Hardwoods increasing faster than pine - - - - - - - - - - 2
  Little change in pine volume - - - - - - - - - - - - - - - - 2
  More pine in Northwest Florida - - - - - - - - - - - - - - 2
  Big increase in pine growth - - - - - - - - - - - - - - - - 3
  Increase in volume of cypress and hardwoods - - - - - - 5
  More low-quality timber - - - - - - - - - - - - - - - - - - 5
  Lower mortality - 6

Changes in timber use - 6

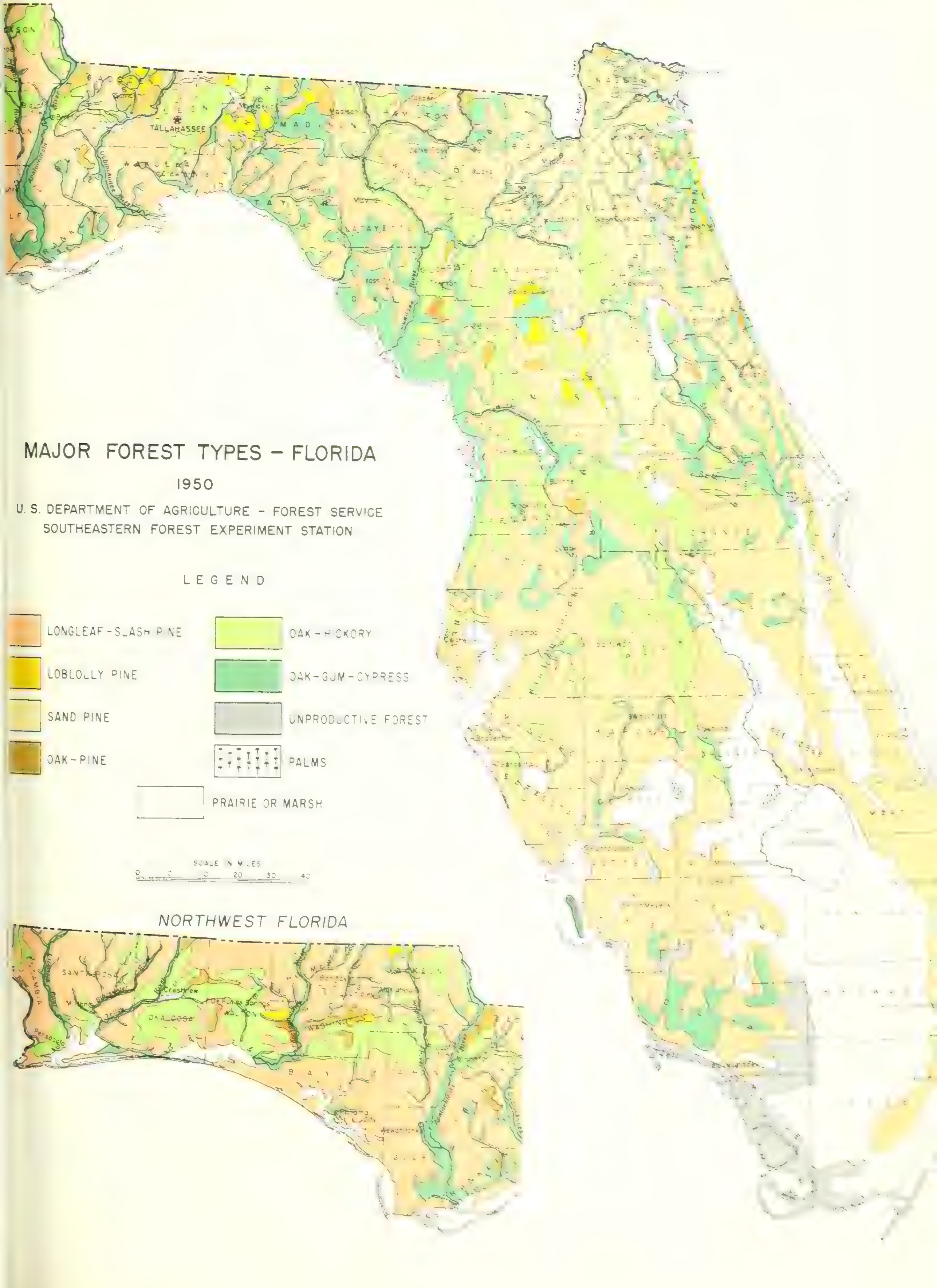
  Less timber used for saw logs - - - - - - - - - - - - - - 7
  Shift to pulpwood - 8
  Downward trend in other forest products - - - - - - - - - 10
  More complete use of timber cut - - - - - - - - - - - - - 10
  Change in source of naval stores - - - - - - - - - - - - 10

Timber supply outlook - 11

  Natural regeneration outlook less favorable - - - - - - - 13
  Less land available to grow pine - - - - - - - - - - - - 13
  Planting outlook favorable - - - - - - - - - - - - - - - - 15
  Large area needs planting - - - - - - - - - - - - - - - - 16
  Medium-stocked stands need improvement - - - - - - - 16
  Mortality outlook - 20
  Forest land ownership affects outlook - - - - - - - - - - 22

Appendix - 25

  Accuracy of forest survey estimates - - - - - - - - - - - 25
  How the forest inventory is made - - - - - - - - - - - - 27
  Definition of terms - - - - - - - - - - - - - - - - - - - 27
  Index to detailed tables - - - - - - - - - - - - - - - - - 32



MAJOR FOREST TYPES – FLORIDA

1950

U. S. DEPARTMENT OF AGRICULTURE – FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION

FLORIDA'S TIMBER

by

Robert W. Larson and Marcus H. Goforth

The period between the completion of Florida's first Forest Survey in 1936 and the third in 1959 spans nearly a quarter of a century.

In 1936, the era of large sawmills was coming to a close, but half the lumber was still produced by a dozen large mills. Taxes were high and lumber prices had not recovered from the depression slump.

Fire burned uncontrolled over much of the forest area. In 1936, only 3.5 million acres out of the total 23.5 million acres of timber land received protection from fire.

Four-fifths of the turpentine and rosin was made from crude gum. Workers collected gum from the chipped faces of 36 million pine trees. The deeply scarred, pitch-soaked 8-foot butt section filled with nails and tins left most of the worked-out pine trees unsuitable for saw logs. In 1936, Florida had only one operating pulpmill and, in the absence of a market, most of the worked-out pines were left to the ravages of fire, wind, and insects.

Most people regarded planting, site preparation, and stand improvement as visionary. Planting contributed less than 3 million pine seedlings annually to the new crop. In 1936, overcutting, poor stocking, low growth, and high mortality were the rule.

CHANGES IN THE TIMBER SUPPLY

Less Land to Grow Timber

Since 1936, the timber supply outlook has changed in many ways. One important change has been the decrease in area of land available to grow timber. During the past 24 years,[1] land-clearing in excess of reversion to forest from other uses has reduced the commercial forest area by 11 percent. Most of this reduction has taken place during the past 10 years. Since 1949, Florida has lost 1.9 million acres of commercial forest land to other uses (table A).

The biggest shift in land-use was from cutover timber land to improved pasture. In 24 years cattle raisers increased the area of improved pasture by nearly 2 million acres. Much of this area came from natural prairies but a large part, perhaps as much as half of it, came from land that formerly grew timber. Also, an increasing amount of forest land is being diverted to such uses as housing developments, manufacturing sites, and highways. Land use for these purposes increased by a million acres since 1935, with most of the increase taking place during the past 10 years. The area used for agricultural crops has not changed much.

In spite of these changes, in 1959 commercial forests still covered 58 percent of the total land area in Florida. This included areas with at least a 10-percent cover of trees and areas formerly supporting tree growth but which have not been converted to other uses.

Not all of the forest area in Florida is suitable for growing commercial crops of timber. On nearly a million and a half acres, trees grow so slowly that few reach usable size in the time normally required to grow a crop of trees. Growth is low on much of this area because of poor drainage.

In 1959, Florida had 19.6 million acres of commercial forest land available to grow timber. In addition, there are about a million acres of idle or abandoned cropland. Some of this land will be returned to crops and, in the light of recent

---

[1] The first Florida forest survey was begun in November of 1933 and completed in April 1936. For comparison purposes, 1935 is used throughout this report as the average year of inventory, making a span of 24 years between the first and the third survey.

Table A. --Land area by class and major forest type, Florida, 1935, 1949, and 1959

(In million acres)

Land class and forest type	Year of survey		
	1935	1949	1959
Commercial forest land:			
Pine and oak-pine type	17.1	14.8	11.6
Hardwood type	4.8	6.7	8.0
Total	21.9	21.5	19.6
Noncommercial forest land	1.6	1.6	1.4
Nonforest land	11.3	11.4	13.0
All land	34.8	34.5	34.0

trends, it appears quite likely that much of it will eventually end up as improved pasture. Part of this area, however, perhaps as much as half of it, will not be put to other uses and will be available to grow timber. So, altogether, Florida currently has about 20 million acres available that are suitable for growing commercial crops of timber.

Less Land Growing Pine

Pine is the lifeblood of Florida's forest industries. However, not only has forest area declined but the area growing pine has dropped even more. Lands on which at least 25 percent of the stand is pine (the pine and oak-pine types) have fallen from 17.1 million acres in 1935 to 11.6 million acres in 1959. Three-fourths of the forest land in Florida is uplands and flatwoods well suited to growing pine but, in 1959, 21 percent of this area did not have enough pine growing on it to qualify as a pine or oak-pine type. Most of the upland and flatwoods area now without pine formerly grew pine but today is either denuded or covered with shrubs and low-value hardwoods.

Better Pine Stocking

While there is less land growing pine, the areas qualifying as pine types are much better stocked now than they were 24 years ago. Since the first Survey, the number of pine trees 1.0 inch d.b.h. and larger has more than doubled. In 1935, despite the large area in pine type, Florida had only enough pine trees to fully stock 3.8 million acres; the number of pine trees now is sufficient to stock 6.8 million acres. However, this is still less than half of the 14.6 million acres of upland and flatwoods area siutable for growing pine.

Hardwoods Increasing Faster Than Pine

The decrease in prevalence of wild woods fires has allowed the hardwoods to increase even faster than pine. While the number of pine trees 1.0 inch and larger increased by 1.1 billion trees, the number of hardwoods increased by 2.1 billion. Area in hardwood types has increased 3.2 million acres. Large areas formerly growing pine now support stands of low-value scrub oak.

Little Change in Pine Volume

The large increase in number of trees did not result in a corresponding increase in timber volume. The increase in pine, which was mainly in small trees, barely offset the loss of volume in large trees. During the 24-year period between the first and third Forest Surveys, the volume of pine growth has exceeded the mortality and timber cut by a slight margin. The total volume of pine, including the volume of growing stock trees and culls,[2] was almost the same in 1959 as in 1935 (table B).

One of the most important changes has been the disappearance of the large pine sawtimber. Although the volume in pine growing stock (timber now or potentially suitable for saw logs) has changed little, the volume of sawtimber in trees 15.0 inches and larger was reduced 52 percent. The volume in small sawtimber has changed but slightly, while the volume of poletimber is up.

Although the volume of pine timber is almost the same as it was 25 years ago, the recent trend in pine inventory volume appears to be downward. The total volume, the growing stock volume, and the volume of small sawtimber all rose between 1935 and 1949 but have decreased since 1949.

The years between 1935 and 1949, when small pine timber volume increased, were the years when the large timber was cut out. Since 1949, the volume in large sawtimber has decreased only slightly, reflecting a decrease in availability. Much of the remaining large sawtimber is either too widely scattered for economical logging or is on land where owners are trying to build up the growing stock volume.

More Pine in Northwest Florida

The location of the pine resource within the State is also changing (table C). The volume of pine in Northwest Florida is much greater now than in 1935, while in Central and South Florida

---

[2] Not suitable for saw logs but mostly usable for pulpwood.

Table B.--Timber volume by species and type of timber, 1935, 1949, and 1959

Species group and type of timber	1935	1949	Percent change	1959	Percent change[1]
Pine:					
Large sawtimber (million board feet)	3,577.3	1,811.4	-49	1,701.9	-52
Small sawtimber (million board feet)	8,488.5	9,617.6	+13	8,425.3	-1
Growing stock[2] (million cubic feet)	3,222.0	3,349.6	+4	3,169.7	-2
All timber (million cubic feet)	3,258.4	3,412.5	+5	3,312.6	+2
Cypress and hardwoods:					
Large sawtimber (million board feet)	6,423.6	3,184.6	-50	5,728.6	-11
Small sawtimber (million board feet)	5,180.0	4,712.8	-9	5,512.3	+6
Growing stock[2] (million cubic feet)	3,393.1	2,768.5	-18	3,781.9	+11
All timber (million cubic feet)	4,352.4	4,353.5	0	5,599.3	+29

[1] Change between 1935 and 1959.

[2] Net cubic-foot volume in all live trees 5.0 inches and larger, including trees too low in quality to make saw logs now or prospectively.

it is much less. Although the volume in Northeast Florida is about the same as in 1935, the 9-percent decrease since 1949 indicates a current downward trend.

Pine timber is becoming more concentrated in the more productive land of Northern Florida. Northeast Florida, with 37 percent of the commercial forest area, has nearly half the pine volume, and Northwest Florida, with 29 percent of the forest land, has 39 percent of the pine volume.

Big Increase in Pine Growth

Although the increase in number of trees did not result in a greater total volume of timber, it did affect growth. Mainly because of the large increase in small trees, pine growth has risen from 156 million cubic feet in 1935 to 217 million cubic feet in 1958.

Most of the rise occurred prior to 1949, when the largest increase in numbers of trees took place. Between 1935 and 1949, pine growth increased 23 percent compared to only 13 percent since 1949.

This growth increase is based on the average diameter growth and the average mortality rates for the period between surveys and reflects entirely the change in the size-class distribution of trees. Pine stands contained three times as many 2- and 4-inch pines in 1959 as in 1935. Growth resulting from 4-inch trees growing into the 6-inch class had doubled and, in 1959, accounted for 22 percent of the total growth. A 57-percent increase in the number of 6- and 8-inch trees also contributed substantially. This expanding growth of small timber has raised substantially the capacity of the timber resource to support the now dominant pulp and paper industry and those other industries which are able to use small logs or bolts.

However, a 52-percent decrease in the volume of large pine sawtimber has reduced the growth of this class of timber and the capacity of the timber resource to support industries dependent upon large, high-quality material.

Table C.--All timber volume by Forest Survey Unit and species group, 1935, 1949, and 1959

(In million cubic feet)

Species group and Survey Unit	1935	1949	Percent change	1959	Percent change[1]
Pine:					
Northeast	1,590.8	1,716.7	+8	1,563.4	-2
Northwest	915.4	1,102.7	+20	1,301.3	+42
Central-South	752.2	593.1	-21	447.9	-40
Cypress and hardwoods:					
Northeast	1,984.2	1,827.0	-8	2,351.7	+19
Northwest	1,308.2	1,392.5	+6	1,796.7	+37
Central-South	1,060.0	1,134.0	+7	1,450.9	+37

[1] Change between 1935 and 1959

Florida Forest Service photo

Since 1935, the big increase in small timber has enabled pine growth to keep pace with the rising cut.

Florida Forest Service photo

Increase in Volume of Cypress and Hardwoods

In contrast to pine, which showed little or no change in volume, the total volume of cypress increased 9 percent during the past 24 years and the volume of hardwoods 39 percent. Also in contrast to pine, hardwood timber volume has increased faster during the past 10 years than between 1935 and 1949. Hardwoods now make up 44 percent of the total volume as compared to 37 percent in 1935.

Like pine, the most valuable class of cypress and hardwood timber has not fared so well. The volume of large cypress sawtimber dropped 31 percent, and the growth of large hardwood sawtimber did not quite replace the cut.

More Low-Quality Timber

Increase in timber volume over the past 24 years added very little to the supply of the kind of timber forest industries now use. Cypress and hardwood timber, which accounted for practically all the increase in timber volume, make up a small part of the total cut — 4 percent from cypress and 11 percent from hardwoods. Even in these species much of the increase has been in low-quality timber. Between 1935 and 1959, the volume in cull cypress trees doubled and the volume in cull hardwood trees increased by 87 percent.

In 1959, nearly a third of the hardwood volume was in cull trees too low in quality ever to make saw logs. Over three-fourths of this volume, however, could be used for pulpwood if markets were available; only 7 percent of the hardwood volume has no industrial use (table D).

Only slightly better than cull timber is the large volume of trees that barely qualify as growing stock and will make only low-quality saw logs. Only 7 percent of the hardwood volume is in trees classed as desirable growing stock. The cut of veneer bolts and better-quality saw logs comes mainly from this class of timber.

The quality of cypress is considerably higher than that of hardwoods. Less than 10 percent of the volume is in cull trees, and a fourth of it is in trees classed as desirable growing stock.

Practically all the pine is suitable for sawtimber now or potentially, and half of it is classed as desirable growing stock (trees capable of producing high-quality lumber and veneer).

Trees too poor in quality to make saw logs contain a third of the hardwood volume.

Table D. --Timber volume by quality and species group, 1959

Timber quality	Pine		Cypress		Hardwoods		Total	
	Million cu. ft.	Percent	Million cu. ft.	Percent	Million cu. ft.	Percent	Million cu. ft.	Percent
Growing stock:								
Desirable	1,601.8	48	419.4	25	271.6	7	2,292.8	26
Other	1,641.2	50	1,080.7	66	2,468.5	62	5,190.4	58
Culls:								
Limited use	65.2	2	107.9	7	940.9	24	1,114.0	12
Unusable	4.4	0	39.3	2	271.0	7	314.7	4
All timber	3,312.6	100	1,647.3	100	3,952.0	100	8,911.9	100

Lower Mortality

In 1935, much of the annual growth was lost to mortality. The stands were choked with worked-out turpentined trees too small and too poor in quality to make saw logs. Repeated fires burned the worked-out faces leaving the trees particularly susceptible to beetle attacks. Heavy winds prevalent during the late summer and early fall in Florida took a heavy toll of these structurally weakened trees. The 1935 survey showed that the volume in recently killed timber amounted to 60 percent of the total growth.

Since 1936, mortality has declined steadily. The pulpmills provided a market for the worked-out turpentine timber; better fire protection greatly reduced losses from this source. In 1936 only 3.5 million acres received organized fire protection. By 1950, the area protected had increased to 14 million acres, and as of June 30, 1960, 16.6 million acres, or 79 percent of Florida's total forest area, was under organized fire protection. During 1959, only 48,426 acres, or only 0.3 percent of the protected area, were burned by wildfires. Also, improved naval stores practices have reduced mortality.

As the number of pine trees and the stand density built up, the reduction in mortality resulting from better fire protection and improved turpentining was offset, in part at least, by greater losses due to suppression and overcrowding. In 1959, the volume lost to mortality was still about 30 percent of gross timber growth. Much of this mortality could have been prevented by timely thinning.

CHANGES IN TIMBER USE

Forest industries in Florida are using substantially more pine and less cypress and hardwood timber now than they were in 1935 (fig. 1). While, on the average, total volume of timber cut has remained about the same, the proportion of the cut from pine has increased from 64 percent in 1935 to 85 percent in 1958. In contrast, the proportion cut from cypress has dropped from 20 percent in 1935 to 4 percent in 1958, and the proportion coming from hardwoods has dropped from 16 percent in 1935 to 11 percent in 1958.

The actual cut in 1958 was substantially below the long-term trend — 198 million cubic feet in 1958 compared to the trend level of 249 million cubic feet. This slump in timber cut in 1958 reflects a sharp drop in both pulpwood and lumber production, probably in response to the recession. It is unlikely that this augurs a sustained downward trend. Year-to-year fluctuations are common, and the difference between the trend and actual cut in 1958 is no greater than in many other years.

Another change is that more and more of the timber cut comes from small timber. In 1948, three-fourths of the timber was cut from trees 11.0 inches and larger; in 1958, only 59 percent of the timber cut was from this size.

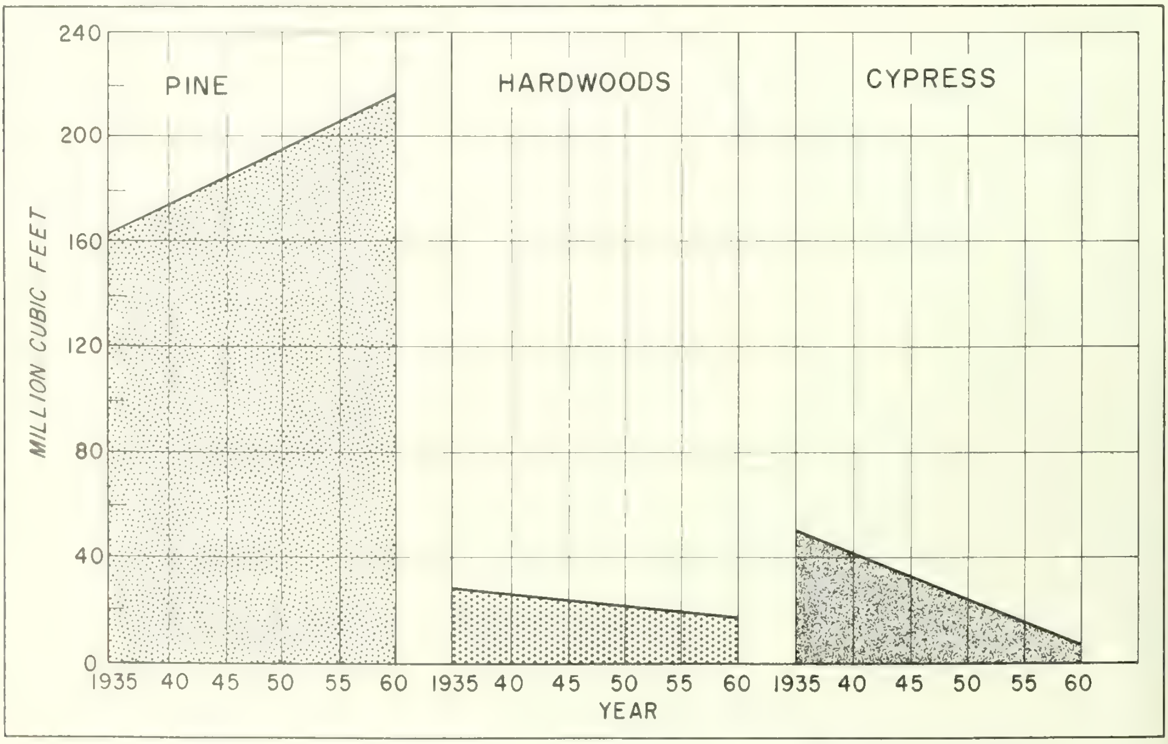


Figure 1.—Trend in timber cut, by species group, 1935 to 1960.

Less Timber Used for Saw Logs

Changes in the cut by species and size reflect the changing pattern of use by product. Percent of the timber cut by product for the Survey years is as follows:

	1935 (Percent)	*1948* (Percent)	*1958* (Percent)
Saw logs	55	41	28
Pulpwood	6	38	62
Other	39	21	10
Total all products	100	100	100

During the past 25 years a shift from a lumber to a pulpwood economy has taken place. Double band sawmills that eat their way through 20 to 30 million board feet of saw logs a year are a thing of the past. In 1909, 35 sawmills in Florida each cut 10 million or more feet of lumber a year. By 1948, this number had fallen to 7; and 10 years later in 1958, only 2 sawmills produced more than 10 million board feet. These large mills were replaced to some extent by small mills, but the production of these small mills was not sufficient to forestall the downward trend in lumber production.

Year-to-year fluctuations tend to hide the long-term trend. The computed trend over the past 22 years indicates a drop in the average annual production of softwood lumber from 657 million board feet in 1936 to 399 million in 1958 — a drop of 39 percent (fig. 2). This trend level of 399 million board feet was still substantially above the actual softwood production of 232 million board feet in 1958.

The cutback has been particularly severe for cypress lumber. In 1936, cypress accounted for 25 percent of the softwood lumber produced, compared to 16 percent in 1948 and only 12 percent in 1958. In 1958, only 28 million board feet of cypress lumber was cut.

The rate of decline has not been quite so severe for pine. Yet, over a 22-year period between 1936 and 1958, the average annual pine lumber production has dropped about 30 percent.

Hardwood lumber production, though a small part of the total, has not changed much since 1936.

Florida Forest Service photo

Most of Florida's large timber has been cut out. Sawmills and pulpwood producers now compete for the same size trees.

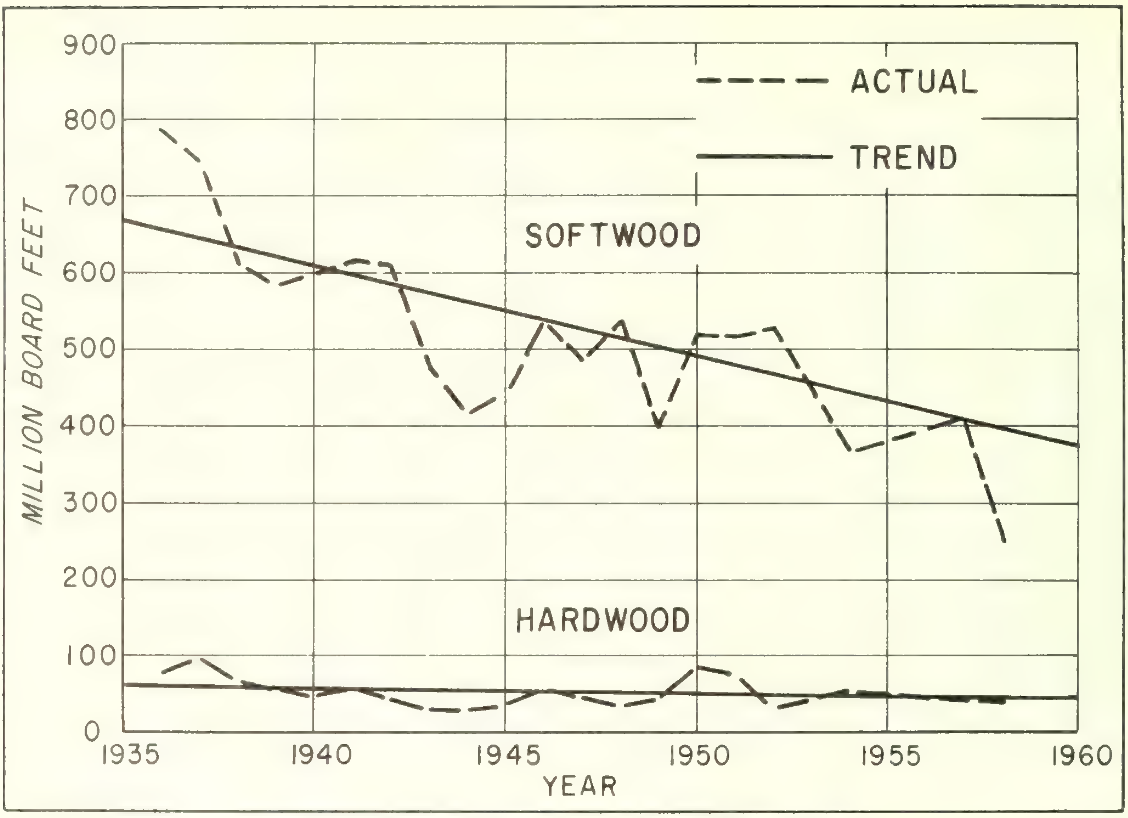


Figure 2.—Trend in lumber production, 1935 to 1960.

Shift to Pulpwood

The pulp industry has taken over first place in Florida's timber economy from the large sawmills. Nine pulpmills have been added to the one in existence in 1936, giving Florida more pulping capacity than any other state in the Nation.

Even by 1948, the shift to a pulpwood economy was well under way (fig. 3). In that year the volume of timber cut for pulpwood very nearly equalled the volume cut for saw logs. By 1958, pulpwood accounted for 62 percent of the timber cut, compared to only 28 percent for saw logs.

The sharp increase in hardwood pulpwood production in 1957 and 1958 strongly suggests an upward trend in the use of hardwoods. Even with this large increase over past use, hardwoods are still a minor part of the total — 5 percent in 1959.

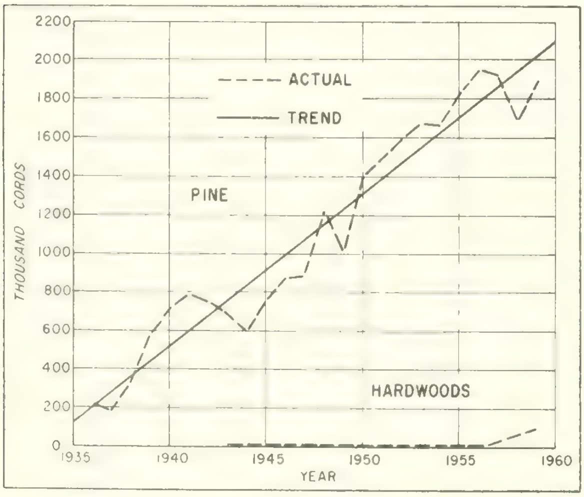


Figure 3.—Trend in pulpwood production (excluding residues), 1935 to 1960.

Florida Forest Service photo

Pulpwood cut is increasing and lumber cut decreasing.

Florida Forest Service photo

Downward Trend in Other Forest Products

Much of the increase in pulpwood production has been offset by a drop in timber cut for other products. In 1958, products other than pulpwood and saw logs accounted for only 10 percent of the timber cut from growing stock.

In terms of value, veneer continues to be an important use of timber in Florida even though the proportion of timber cut for veneer has dropped from 8 percent in 1948 to 4 percent in 1958. In 1958, 31 plants, including 6 that were out of the State, processed 60 million board feet of veneer logs and bolts (Doyle scale) from Florida's hardwood timber. The volume of hardwood timber used for veneer nearly equals that used for saw logs. About four-fifths of the veneer bolts were cut from blackgum, sweetgum, and tupelo.

The use of wood for fuel has also dropped sharply. The fuelwood proportion of the total output of timber products has dropped from 351,700 cords in 1948 to 287,155 cords in 1958. The amount cut from growing stock has dropped even more. In 1958, very little growing stock was used for fuel.

The production of poles and piling increased rapidly between 1935 and 1948, but production has not changed much during the past 10 years.

Some forest industries are disappearing. Hewn railroad ties have steadily been replaced by sawn ties. Cooperage and shingle plants have completely disappeared from Florida in the last decade.

More Complete Use of Timber Cut

Florida has made substantial progress toward more complete use of all trees cut. Today nearly all usable sections of softwood trees cut are being utilized. Very little softwood volume qualifying as growing stock is left in the woods. Sawmills use a greater portion of trees cut for saw logs now than formerly, and most of what is left is used for pulpwood. Usable volume in cut trees remaining in the woods amounts to only about 60,000 cords a year, most of it very rough, limby, and widely scattered. This material is not only costly to log but, because of small size and many knots, rather undesirable for pulpwood.

Also, about three-fourths of the residue from the manufacture of primary products from timber is now being used for pulpwood. Virtually all the coarse material (slabs and edgings) produced by sawmills is being utilized either for pulpwood or for fuel.

In 1956, only 3,823 cords of pulpwood came from wood residues; by 1959, 134,080 cords, or nearly 7 percent of the total pulpwood production, came from wood residues, mainly pine slabs and edgings. This volume accounted for over half the total volume of coarse mill byproducts. Most of the remainder is used for domestic fuel.

In 1959, pulpwood chips equal to 122,900 cords of pine came from slabs and edgings produced by sawmills.

Much of the increase in the use of slabs and edgings for pulpwood came from material formerly burned for fuel. The chances are good that a large part of the slabs and edgings now being burned will also be available for pulpwood as more and more sawmills install equipment to produce bark-free chips.

Hardwoods, in contrast to softwoods, are very poorly utilized. Not only are hardwoods poorer in quality than softwoods, but the users of hardwood timber are far more exacting in their requirements. The demand is mainly for logs that will make either high-grade lumber or veneer. About 18 percent of the hardwood timber cut is left in the woods. This volume is mainly tops that have little use except as fuel.

Only about half the hardwood volume transported to the mill is used in the manufacture of primary forest products. About 40 percent of the byproduct material is used, mainly as fuel. Only 10,889 cords of hardwood mill byproducts were used for pulpwood in 1959.

Change in Source of Naval Stores

In addition to wood products, Florida's forests are an important source of turpentine and rosin, usually referred to as naval stores.

At one time, gum gathered from living pine trees provided the sole source of turpentine and rosin, but other sources now produce a large proportion of total naval stores. In 1936, three-fourths of the rosin and four-fifths of the turpentine was produced from gum. By 1950, less than half of the turpentine and rosin was produced from gum, and in 1959 other sources had replaced gum for all but 17 percent of the total production of turpentine and rosin.[3] In 1935, 36 million trees were being worked for gum in Florida. By 1949, this number had dropped to 14 million trees, and in 1959 less than 3 million trees were being worked. Production in Florida is now concentrated almost entirely in the Northeast.

This decline in worked trees reflects competition from cheaper sources rather than a shortage of timber. Since 1935, the number of slash and longleaf pine suitable for turpentining has increased, and in 1959, Florida had nearly a half million acres of land suitable for turpentine operations that were not being worked. These are areas with 20 or more round longleaf and slash pine trees 10 inches d.b.h. or larger per acre. Trees on only 132,000 acres were being worked in 1959. A partial reason has been that some large landowners considered turpentining unprofitable or undesirable. A recent dramatic rise in prices, however, is altering this attitude.

Another important change is that present day turpentining no longer has the adverse effect on growing timber for wood products that it had in 1936. In 1936, turpentining practices made a large part of the volume in worked-out stands unfit for wood products. Today, such improved practices as bark chipping with acid, use of removable nails and tins, and confining turpentining to trees marked for early harvesting have made turpentining an important supplemental source of income from woodlands, with little or no interference with growing timber for wood products. In 1959, 92 percent of the faces in Florida were worked by gum producers participating in the Naval Stores Conservation Program. The program provides for the government and the producer sharing the cost of following approved conservation practices.

Seasoned pitch-soaked stumps left following the logging of the old-growth pine stands were the first to replace gum as a source of naval stores. In 1958, nearly two-thirds of the rosin and 29 percent of the turpentine were produced from pitch-soaked stumps. The use of stumps in Florida is expanding as stump supplies are being exhausted in certain other states. In 1958, seven plants in Florida and four plants in other states processed 793,000 tons of wood. At the present rate of consumption, there appears to be no immediate shortage of stumps in Florida. In 1959, the number of old-growth stumps totaled over 130.8 million, of which 75 percent is readily available, although the cost for stumps has jumped as much as threefold recently. Another 35.5 million will become available as timber now preventing access is logged.

The uprooting of old pine stumps is essentially a mining operation. At the present time it appears unlikely that second-growth stumps, because of their smaller size and lower pitch content, will replace the old-growth stumps. Thus, eventually, the naval stores now produced from stumps must come from other sources.

As the supply of stumps is depleted, byproducts from the sulphate pulping process may be expected to replace in part at least the turpentine and rosin now coming from stumps. Turpentine distilled from sulphate vapors and rosin produced from tall oil have increased rapidly with the increase in sulphate pulping capacity. In 1959, pulpmills supplied half the turpentine and 20 percent of the rosin. The naval-stores-producing potential from pulpmills does not appear to be as great for rosin as for turpentine. Thus, as the old-growth stumps disappear, users of rosin may have to turn more and more to gum from pine trees to fill their needs.

Total consumption of naval stores products had changed little in the 25 years preceding 1959, but a sharp upswing in price and export demand has taken place since 1959. In the past, the Nation's industries have been using about 2 million 520-pound drums of rosin and 600,000 fifty-gallon barrels of turpentine. For the six seasons from 1953 through 1958, U. S. rosin consumption exceeded production, and stocks declined by an average of about 40,000 drums per year. Free world production of paper and paper products, which represents the largest single application of rosin, advanced 9.4 percent in 1959 and by the first quarter of 1960 was 14.1 percent above the 1958 level. One entirely new element in the extraction of gum naval stores from trees is the possibility of "gum orchards." In such orchards, rows of planted pines, bred from genetically superior strains, could produce at least twice as much gum as wild stands, and at the same time cut labor costs. A trial orchard of this type has been established by the U. S. Forest Service on the Olustee Experimental Forest.

TIMBER SUPPLY OUTLOOK

In many ways, the timber supply outlook is much brighter today than it was 25 years ago, or even 10 years ago. Protection from fire has greatly improved and some progress has been made in disease control. The State has twice as many pine trees. Annual growth has increased 39 percent. Improved turpentining practices have eliminated most of the losses arising from this source in 1936. Large areas are being cleared of shrubs and low-value hardwoods to make room for pine.

---

[3] Source: Agricultural Marketing Service, USDA.

Florida Forest Service photo

Crude gum from live pine trees is no longer the main source of turpentine and rosin.

Today nearly two-thirds of the rosin comes from pitch-soaked pine stumps . . .

Florida Forest Serv ph

Florida Forest Service photo

and over half of the turpentine comes from pulpmills.

Not all of the changes have improved the outlook, however. The State has less forest area and less volume in pine trees 13.0 inches and larger. In the past 10 years, the surplus growth in timber smaller than 13.0 inches failed to completely offset the overcutting of larger timber. Also, while the number of pine trees has increased, the increase in hardwoods has been twice as great. Large areas, which in 1936 supported pine stands, now support only shrubs and low-value hardwoods.

While the net result of past changes has been a substantial improvement in the timber supply outlook, merely maintaining past trends will not only fall far short of utilizing Florida's timber-growing potential, but will also fail to provide the growth needed to sustain the upward trend in timber cut. Between 1936 and 1958, the cut of pine timber increased 34 percent. Maintaining this trend would mean another 33-percent increase in the cut by 1989. Yet a 30-year projection of the past average annual change in numbers of trees by 2-inch diameter classes would result in only a 9-percent increase in growth (table E).

A continuation of past trends will result in shortages of the largest and best-quality cypress and hardwood timber, but the supply of small, low-quality timber will continue greatly to exceed the demand.

Many of the factors influencing future trends may be expected to operate in the future as they have in the past, but much can be done to reinforce desirable trends and reverse those which are not.

Natural Regeneration Outlook Less Favorable

The increase in pine growth during the past 24 years reflects almost entirely the favorable conditions for natural regeneration which resulted in a rapid buildup of small timber.

The outlook for natural pine regeneration in the future is not nearly so favorable. Most of the increase in small pines took place between 1935 and 1949. The number of 4-inch trees more than doubled between 1935 and 1949, but between 1949 and 1959 the number increased only 24 percent. The smaller increase of only 13 percent in the number of 2-inch trees during the past 10 years suggests a further leveling-off of the regeneration rate and, consequently, of the growth rate.

This leveling-off of the increase in the number of small pines reflects a change in conditions favorable to natural regeneration. In 1935, cutting and large-scale turpentining coupled with frequent burning kept a large share of Florida's forest land poorly stocked. The sharp reduction in burning since 1935 created conditions favorable to natural pine regeneration, and pine seedlings became established in large numbers in the many openings in the forest stands. However, this increased fire protection also favored the encroachment of hardwoods. The number of hardwood trees 1.0 inch or larger more than doubled. Pines were replaced by hardwoods over large areas.

Thus, by 1959, most of the land available for natural regeneration in 1935 had either become stocked with pine or was covered with hardwoods and brush. Consequently, Florida today has very little poorly-stocked land with conditions favorable to the natural regeneration of pine. In addition, out of the total 483,100 acres of flatwoods and upland area cut over annually during the 3-year period prior to 1959, 61 percent is poorly stocked and is not expected to restock with pine because of inadequate seed source or competing ground cover.

Less Land Available to Grow Pine

The downward trend in forest area also has a bearing on the regeneration outlook, especially since land converted from forest to other uses in the past has been mainly land suited to growing pine. In the light of recent land-use trends, the shift from forest to other uses may increase. The increase in improved pasture and urban lands was much greater during the past 10 years than the previous 14. Florida will be fortunate to retain the commercial forest area it now has, and the chances are good that growing competition from other uses will further reduce the area available for timber-growing. This will require more efficient use of the remaining forest area just to maintain the current level of growth.

Table E. --Total timber growth and trend level of timber cut by species group for selected years

Item	1935	1948	1958	1989 1/
	- - Million cubic feet - -			
Pine:				
Net growth	156	192	217	236
Timber cut	157	188	211	234
Net change	-1	+4	+6	+2
Cypress:				
Net growth	32	25	38	41
Timber cut	48	26	10	35
Net change	-16	-1	+28	+6
Hardwoods:				
Net growth	64	80	94	132
Timber cut	38	32	28	86
Net change	+26	+48	+66	+46

1/ Projected data based on the average annual change in timber inventory between 1935 and 1959.

Florida Forest Service photo

The area favorable to natural pine regeneration is decreasing. Many of the forest openings created by frequent wildfires have filled in with pine or low-value hardwoods in response to better fire protection.

Florida Forest Service photo

Planting Outlook Favorable

Between 1937 and 1948, the number of pine seedlings planted annually averaged less than 5 million. Planting thereafter made spectacular gains. Pine seedlings planted since 1948 have averaged 91 million annually and during the 1959-60 season, 171 million. The number of pine seedlings planted in Florida between 1937 and 1960 is shown in the following tabulation:

Planting season	*Thousands*
1937-38	4,703
1938-39	5,339
1939-40	7,752
1940-41	8,314
1941-42	5,218
1942-43	3,004
1943-44	2,217
1944-45	2,608
1945-46	1,753
1946-47	473
1947-48	10,680
1948-49	19,777
1949-50	27,171
1950-51	16,798
1951-52	19,856
1952-53	45,134
1953-54	72,773
1954-55	65,012
1955-56	87,761
1956-57	177,516
1957-58	185,590
1958-59	197,495
1959-60	171,351

This recent planting will not affect growth much for the next 15 to 20 years, but after 1980 plantations will begin to add substantially to the total growth. The full impact of the current planting program will not be felt until about 1990 and, even then, contribution to sawtimber growth will still be insignificant.

This growth from plantations will not be entirely an addition to the projected growth of 236 million cubic feet based on past natural regeneration. Planting in the future will replace a large part of the natural regeneration, partly because of the unfavorable conditions for natural regeneration and partly because of the increasing tendency of landowners to plant rather than risk incomplete stocking from natural regeneration.

Florida Forest Serv

As conditions become less favorable for natural regeneration, landowners will have to depend more and more on planting to restock their forest land.

Large Area Needs Planting

In spite of past and probable future shifts from forest land to other uses, Florida still has extensive areas suitable for restocking to pine. Out of the total 19.6 million acres of commercial forest land, 14.6 million acres are upland and flatwood sites suitable for growing pine. Today, a very large part of this area is growing only a fraction of the pine timber it is capable of producing. Of the 14.6 million acres, 8.8 million acres, or 60 percent, are less than 40 percent stocked with growing stock, that is, trees which will now or prospectively qualify as sawtimber (table F). Practically none of this land is expected to restock adequately within the next 10 years. Very little of it has an adequate seed source, and more than half of this poorly-stocked land has a cover of low-value hardwoods, culls, and shrubs which must be removed before it can be planted or seeded.

In addition, timber cutting adds nearly 300,000 acres annually to this potential pine area in need of planting or direct seeding. This is 61 percent of the pine area cut over annually. In view of this annual increase in poorly stocked pine land which is not expected to restock naturally, it seems unlikely that natural regeneration is replacing the trees cut. It appears likely that in the future more and more planting will be required just to sustain the present stand. And for each tree cut, several trees must be planted to offset normal mortality from suppression, insects, and disease.

Medium-Stocked Stands Need Improvement

Improving the productivity of medium- to well-stocked stands offers still another opportunity to increase growth. Florida has 3.4 million acres of pine sites which are now 40 to 70 percent stocked with growing stock — but on which low-value trees and shrubs control 20 percent or more of the area and prevent the stands from becoming fully productive (table G). The removal of this less desirable material from the stands would make growing space available for the development and more rapid growth of the remaining high-quality trees and, in many instances, for the establishment of additional trees.

The opportunity to improve productivity on 1.2 million acres of this area is especially favorable. The stands are now at least 40 percent stocked

Table G. --Commercial forest area by major treatment needed to improve stocking, 1959

Treatment	Commercial forest area	
	Thousand acres	Percent
No treatment:		
Pine sites	2,372.1	12.1
Lowland sites	405.0	2.1
Total	2,777.1	14.2
Stand improvement:		
Pine sites	3,444.3	17.6
Lowland sites	2,874.3	14.6
Total	6,318.6	32.2
Regeneration:		
Pine sites	8,804.1	45.0
Lowland sites	1,686.0	8.6
Total	10,490.1	53.6
All commercial forest area	19,585.8	100.0

Table F. --Commercial forest land potentially available for planting or direct seeding to pine, by site quality, 1959

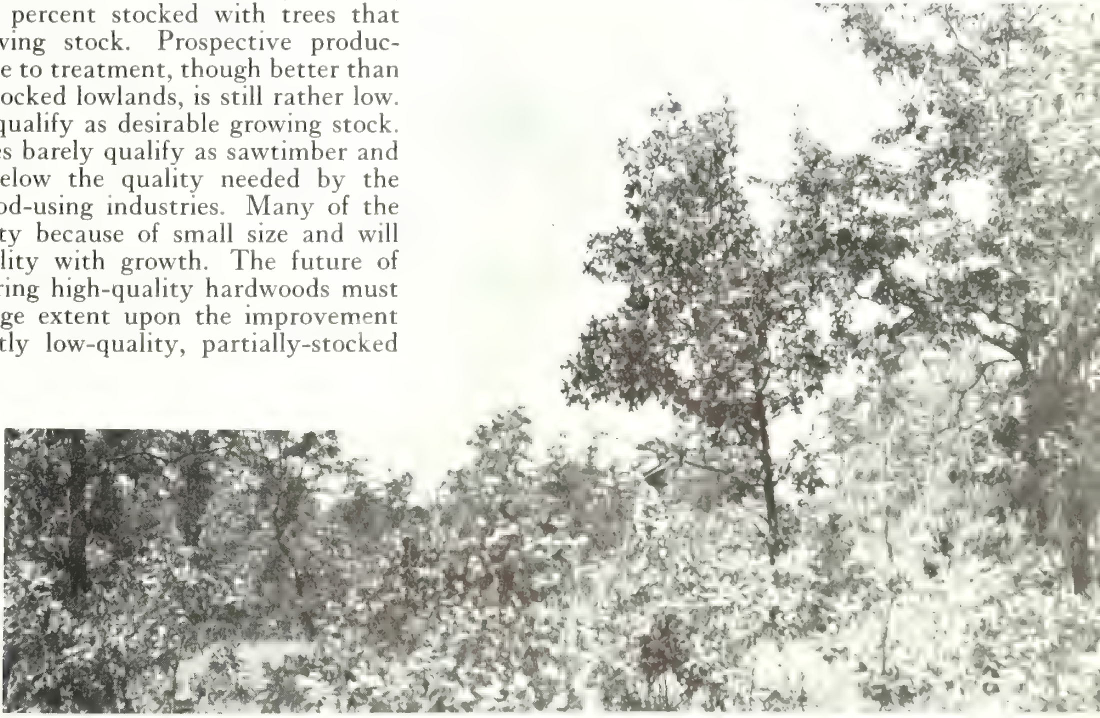
Preplanting condition	Site quality			Total
	Good	Fair	Poor	
	- - - - - - - - Thousand acres - - - - - - - -			
Site preparation not required:				
Commercial forest area, 1958	730.2	1,568.5	1,536.6	3,835.3
Increase due to cutting, 1958	60.3	53.1	33.6	147.0
Total, 1959	790.5	1,621.6	1,570.2	3,982.3
Site preparation required:				
Commercial forest area, 1958	896.8	1,909.2	1,867.6	4,673.6
Increase due to cutting, 1958	45.6	65.7	36.9	148.2
Total, 1959	942.4	1,974.9	1,904.5	4,821.8
All types, 1959	1,732.9	3,596.5	3,474.7	8,804.1

with desirable trees which will produce a 16-foot log free of defect if under 15 inches d.b.h., or if more than 15 inches, a 24-foot log that is 90 percent or more usable for lumber. The undesirable material is largely low, shrubby vegetation that can be eliminated by prescribed burning. Also, the larger, low-quality timber is pine that can be sold for pulpwood to defray the cost of treatment.

The potential benefits from stand improvement are not so great on the remaining 2.2 million acres of partially productive pine sites. Although the stands are medium to well stocked, the present stand is of much lower quality; less than 40 percent of the area is stocked with select trees. Many landowners interested in obtaining prompt and complete restocking of their land may prefer to remove the present stand and take the action necessary to restock the area with pine.

Lowland sites in Florida offer fewer opportunities to increase productivity than the pine sites. Less than half a million acres are well stocked with desirable trees, mainly cypress and hardwoods; 1.7 million acres are less than 40 percent stocked with growing stock. The prospect for natural regeneration of desirable trees is very poor. The areas for the most part are densely covered with shrubs and cull trees, and the low, wet sites make the use of heavy machinery to remove the undesirable material difficult or impossible. Research is needed to develop practical and economical ways of improving the productivity of these sites.

Nearly 3 million acres of lowland sites, however, are at least 40 percent stocked with trees that qualify as growing stock. Prospective productivity in response to treatment, though better than on the poorly stocked lowlands, is still rather low. Very few trees qualify as desirable growing stock. Most of the trees barely qualify as sawtimber and are generally below the quality needed by the present hardwood-using industries. Many of the trees lack quality because of small size and will improve in quality with growth. The future of industries requiring high-quality hardwoods must depend to a large extent upon the improvement of these currently low-quality, partially-stocked lowland stands.



Florida Forest Service photo

Most of Florida is well suited to growing pine, but today much of the area is either denuded or, more commonly, covered with cull trees and shrubs.

Florida Forest Service photo

Successful regeneration on many poorly stocked areas will require site preparation.

Florida Forest Service photo

Each year, to insure prompt restocking, three out of every five acres cut over require planting, usually preceded by site preparation.

Florida Forest Service photo

Low-value trees and other unwanted material must be removed or deadened in many medium-stocked stands to make room for the better trees.

Florida Forest Service photo

Mortality Outlook

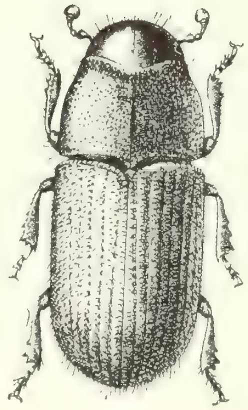
Currently, much of the volume of timber lost from mortality is in trees that die from suppression or overcrowding in dense unmanaged stands. In the future, better spacing, resulting from a greater dependence upon planting and intermediate harvest cuts, will reduce much of the loss from overcrowding. Frequent thinning and stand improvement will also reduce mortality by removing from the stand the least thrifty trees most susceptible to natural destructive agents.

While intensive forest management will help reduce mortality from overcrowding, it can in some ways increase the threat of certain kinds of epidemic or catastrophic losses. Well-stocked, even-aged, single-species stands that are being developed under current management practices favor the buildup and spread of insects and disease. For example, thinned pine plantations are especially susceptible to losses from root rot caused by *Fomes annosus.* Trees are close enough together to permit *F. annosus,* which frequently invades freshly cut stumps, to spread to the remaining live trees through roots of stumps. Infected live trees often are killed or blown down. In some instances, root rot threatens the destruction of a large part of the residual stand following thinning.

Also, the lack of natural barriers and the added fuel provided by extensive areas of well-stocked pine stands increase the threat of severe and widespread damage from fire.

As forest landowners spend more and more money to improve the productivity of their forest stands, protection from insects, disease, and fire becomes imperative in order to safeguard their investment. Research is needed to develop ways of insuring early detection and suppression of incipient epidemic flareups of insects and disease; also, advance plans for the prompt salvage of dead and dying trees are needed to reduce the impact of catastrophic losses from such forces as hurricanes.

Florida's mounting investment in growing timber greatly increases the importance of reducing the threat of such potential killers as fusiform rust (above) and turpentine beetles (left). The volume in trees killed by insects and disease now exceeds that killed by fire.



Florida Forest Service photo

Florida Forest Service photo

Florida's well-organized, well-trained, and well-equipped fire protection organization has bettered pine stocking and increased growth.

Florida Forest Service pho

Forest Land Ownership Affects Outlook

The specific type of action required to influence future timber trends depends to a large extent upon the major interests of the people who own the land. Two-thirds of the commercial forest land in Florida is owned by nearly 100,000 owners who do not depend upon timber for their main source of income (table H). Over half of them are farmers who, on the average, own 160 acres of woodland. The remaining owners include merchants, lawyers, gum producers, mining companies, and land improvement companies.

Forest industries own 4.5 million acres or 23 percent of the forest area (table I). Most of this area (82 percent) is owned by pulp companies. The remaining 2.2 million acres (11 percent) is owned by public agencies. Half the land in public ownership is national forests; the remainder is about equally divided between the State of Florida and the Department of Defense, each owning about a half million acres.

While productivity has improved in recent years, it is still far below potential on all classes of ownership. However, the productivity of land owned by public agencies and forest industries is significantly higher than farm woodlands and forest land owned by people not connected with forest industries. The average annual net growth on public land in 1958 was 17 cubic feet per acre, and on forest industry lands, 22 cubic feet per acre. In contrast, farm woodlands are producing only 13 cubic feet per acre per year, and other private lands, 14 cubic feet.

The better forest growth on industrial lands in part reflects higher potential productivity of the land. Growth per acre of well stocked land belonging to forest industries is 36 cubic feet per acre per year, compared to about 30 cubic feet for other ownerships. Less than 10 percent of industrial forest land is classed as poor site, compared to 28 percent of the farm woodlands and 23 percent of other private ownerships.

The greater current productivity of public and industrial lands also reflects better stocking, partly in response to better management and also because better sites are generally more responsive to efforts to increase stocking. Current growth on lands of forest industry is 59 percent of the growth attainable if all the area were well stocked. In contrast, farm and other private lands are growing only about 45 percent of the growth of well stocked stands.

More intensive cutting in relation to growth has contributed to lower productivity on the farm and other private lands. In 1958, when timber cutting was well below the average of the preceding 10 years, pine cut on farm woodlands still exceeded the net growth (table J). On other ownerships, pine growth exceeded the cut by almost 50 percent.

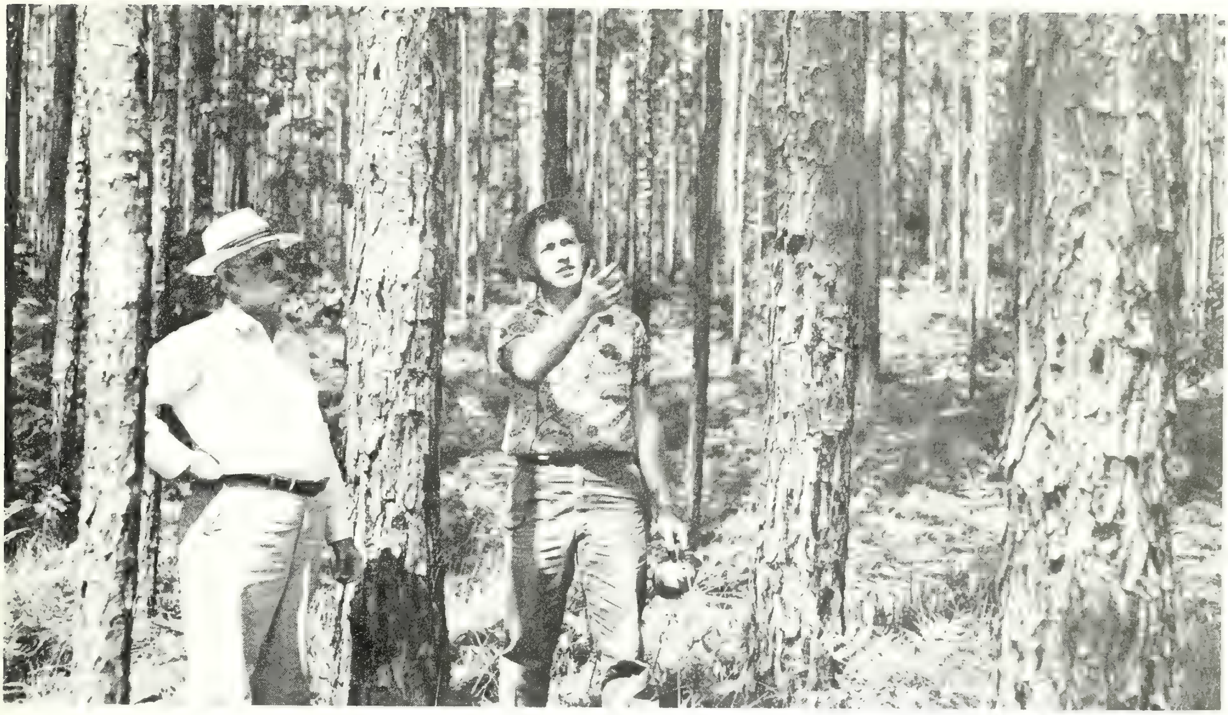
The major effort needed to realize potential growth must be expended on farm woodlands and other private land (table K). Growth on at least three-fourths of the forest land in Florida could be increased. On half of the forest area, regeneration, mainly to pine, is needed. The presence of low-value timber impedes growth on another 6.3 million acres, and stand improvement is needed. Such improvement would not only result in stands better stocked with desirable timber but would greatly reduce mortality losses and up the growth rate by permitting harvest of the least thrifty trees.

The increase in stocking and reduction in mortality that would follow from carrying out the needed regeneration, stand improvement, and measures to reduce mortality losses should result in at least the gross growth now being attained with well stocked stands and a reduction in mortality to 15 percent of the gross growth. This would mean an increase in growth from the current 312 million cubic feet to 846 million cubic feet — nearly 3 times current growth. However, only a third of this potential increase in growth can be realized from public and industrial forest lands, where the prospects for intensive forest management are good. On other ownerships, unless past and current trends are reversed, productivity will continue to decrease. The realization of the potential growth on this area represents over three-fourths of the State's pine regeneration job and over half the stand improvement job.

Table H. --Percent of commercial forest area, net growth, timber cut, and potential net growth by ownership

Class of owner	Forest area	Timber cut	Current growth	Potential [1] growth
Public	11	11	12	11
Forest industries	23	30	31	26
Farm	28	30	23	26
Other private	38	29	34	37
All owners	100	100	100	100

[1] As indicated by the percent that current growth is of the growth of well-stocked stands.



Florida Forest Service photo

Florida Forest Service photo

Farmers and other private owners not connected with forest industries need help from both the wood-using industries and public agencies to make their land grow more and better-quality timber.

Table I. --Commercial forest area by ownership and site quality, 1959

(In thousand acres)

Class of owner	Site quality			Total
	Good	Fair	Poor	
Public	744.5	782.4	690.7	2,217.6
Forest industry	2,296.1	1,774.6	439.1	4,509.8
Farm	1,303.0	2,567.2	1,504.4	5,374.6
Other private	2,229.6	3,514.6	1,739.6	7,483.8
All owners	6,573.2	8,638.8	4,373.8	19,585.8

Table K. --Major action needed to increase productivity, and possible increase in growth resulting from treatment, by ownership

Class of owner	Major treatment		Potential 2/ additional growth
	Regeneration 1/	Stand improvement	
	Thousand acres		Million cu. ft.
Public	1,107	823	55.8
Forest industry	1,700	1,791	122.3
Farm	3,375	1,530	146.1
Other private	4,308	2,175	210.1
All owners	10,490	6,319	534.3

1/ Exclusive of 1.4 million acres of idle and abandoned cropland.

2/ Based on bringing growth of all stands up to current growth of well stocked stands plus reducing mortality to 15 percent of gross growth.

Table J. --Growth, mortality, and timber cut, by ownership and species group, 1958

(In million cubic feet)

Class of owner	Species group	Gross growth	Mortality	Net growth	Timber cut
Public	Pine	45.7	13.5	32.2	15.8
	Cypress	2.7	.8	1.9	4.1
	Hardwoods	5.8	3.0	2.8	.3
	Total	54.2	17.3	36.9	20.2
Forest industry	Pine	98.9	29.6	69.3	51.2
	Cypress	14.8	4.9	9.9	.2
	Hardwoods	38.3	20.1	18.2	5.6
	Total	152.0	54.6	97.4	57.0
Farm	Pine	60.0	17.9	42.1	44.3
	Cypress	14.8	4.9	9.9	2.5
	Hardwoods	40.1	21.1	19.0	10.9
	Total	114.9	43.9	71.0	57.7
Other private	Pine	97.3	29.1	68.2	48.2
	Cypress	20.5	6.8	13.7	.3
	Hardwoods	52.0	27.4	24.6	5.9
	Total	169.8	63.3	106.5	54.4
All owners	Pine	301.9	90.1	211.8	159.5
	Cypress	52.8	17.4	35.4	7.1
	Hardwoods	136.2	71.6	64.6	22.7
	Total	490.9	179.1	311.8	189.3

Appendix

ACCURACY OF FOREST SURVEY ESTIMATES

Forest-resource information collected by the Forest Survey includes estimates based on samples having an associated sampling error. A large enough sample is taken to keep the sampling error below a specified minimum for forest area and timber volume. Nonsampling errors, such as may arise from mistakes in judgment, measurement, recording, and compilation, are kept to a minimum through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest Area

Estimates of forest area were based on the classification of 161,486 sample points systematically spaced on aerial photographs, followed by a ground check of 7,092 of these points to adjust for changes in land use since the date of photography. The sampling error for the 20 million acres of commercial forest area in the State is 0.48 percent.

State and Unit forest areas by ownership shown in table 2 of the appendix are compiled from ownership records and do not have sampling errors. Other estimates of forest areas, such as forest area by forest type, stand size, stocking, and ownership by the above detail are based on the 5,197 ground forest plots and have a sampling error. Thus, ownership breakdowns based on the plots will differ slightly from those based on compilations from records.

The sampling error of forest area breakdowns depends upon the proportion that the breakdown is of the forest area and the proportion that the forest area is of the total land area in the State.

Sampling errors for areas smaller than the State total and for forest proportions other than 56.3 percent can be obtained by referring to figures 4 and 5. For example, there are 5,722,000 acres of commercial forest land in Northwest Florida. This represents 79 percent of the total land in Northwest Florida. The lower curve in figure 5 shows that the sampling error of 79 percent is 0.276 percent for the State as a whole. Since Northwest

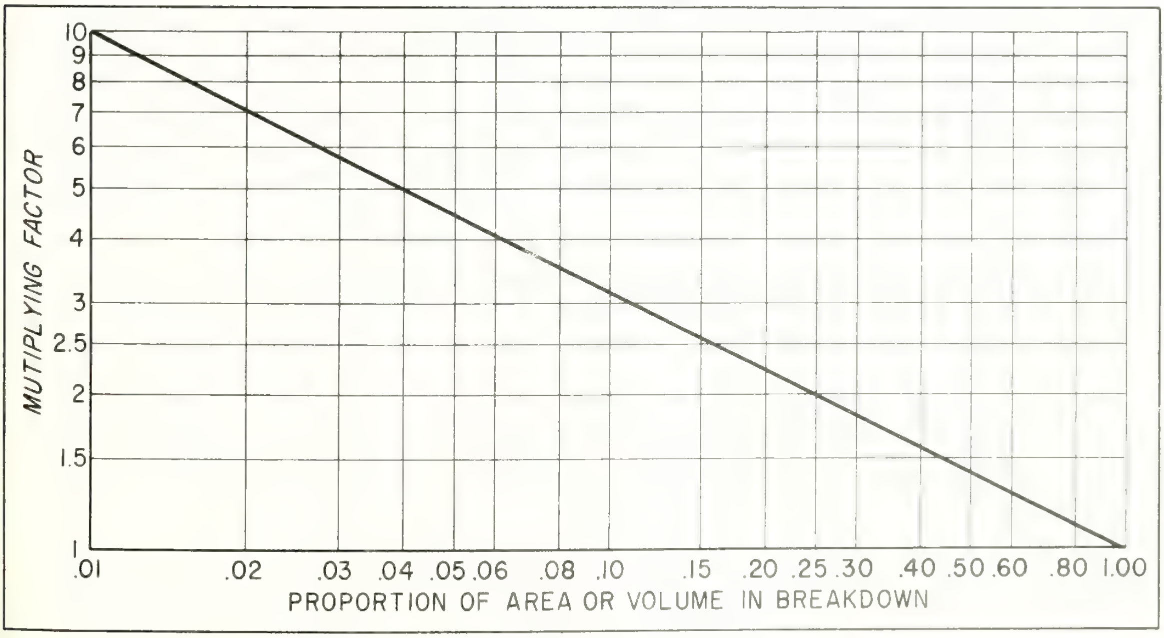


Figure 4.—Ratio of standard error of an area or volume breakdown to the percentage error of the estimate of total area or volume.

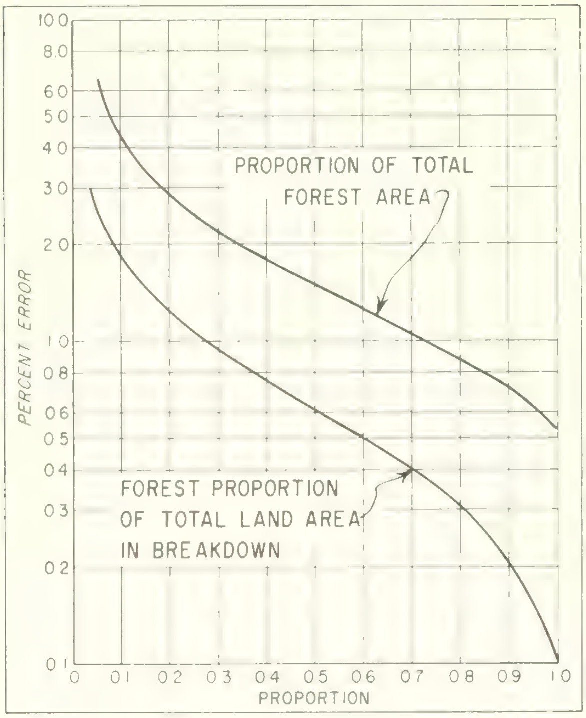


Figure 5.—Percent standard error by proportion of land area and commercial forest area.

Florida has only 29 percent of the State's commercial forest land, this sampling error must be multiplied by the factor 1.85 obtained from figure 4. Therefore, the sampling error of the 5,722,000 acres is 0.276 x 1.85, or 0.51 percent.

Similarly, the sampling error may be determined for the estimate of forest area in a single county. Commercial forest occupies 525,900 acres in Levy County, 75 percent of the land area. This is 2.7 percent of the State's commercial forest. The sampling error of this acreage is 0.31 percent x 6.1, or 1.9 percent.

The sampling error for breakdowns for all forest area in the State may be obtained from the upper curve in figure 5. For example, the proportion of the forest area that is pine and oak-pine type in Florida is 11,579.3 ÷ 19,585.8, or 0.591. The sampling error of this breakdown is 1.26 percent using only figure 5. When the type breakdown is for less than the entire State, both tables must be used. Northwest Florida has 3,271,400 acres of pine and oak-pine type, 57.2 percent of the commercial forest land. Since Northwest Florida has only 29 percent of the State's commercial forest land, the sampling error of 1.3 from figure 5 must be multiplied by the factor 1.85 from figure 4. Thus, the sampling error is 2.4 percent. The sampling error is slightly higher when the forest proportion is lower than the State average of 56.3 percent and slightly lower when above this average. This difference through the range of forest proportions in the State represents a very small part of the total sampling error and for all practical purposes can be ignored.

Timber Volume

Estimates of inventory volume and growth are based on measurements recorded at 5,197 of the photo points classed as forest land. Sampling errors for the entire State and per billion units of volume are shown below:

Estimate	*Total* (Percent)	*Per billion* (Percent)
Growing stock volume		
Cubic feet or cords	2.04	5.58
Board feet	2.15	10.19
Net cubic-foot growth	1.64	0.91

Estimates for detailed breakdown or for areas covering less than the State have larger sampling errors. The sampling error for part of the total is obtained by applying the appropriate multiplying factor corresponding with the proportionate part of the total to the total error for the State (fig. 4). For example, the sampling error for the volume of pine growing stock in cubic feet is 2.04 x 1.51, or 3.08 percent. The multiplying factor of 1.51 corresponds to the proportion of pine in the growing stock volume (3,243.0 ÷ 7,483.2, or 0.43). The sampling error for the 1,274.5 million cubic feet of pine growing stock in Northwest Florida (17.0 percent of the State total) is 2.04 x 2.4, or 4.9 percent.

Sampling errors for net growing stock volume range upward from a low of 9.4 percent for Liberty County with 4,795,000 cords. The sampling errors for individual county statistics are too high to be useful; they are presented by county to permit adding any combination of counties together until the total is large enough to meet the desired degree of reliability. To obtain an estimate with a sampling error of 10 percent, data for enough counties must be added together to total about 4.1 million cords on the average.

HOW THE FOREST INVENTORY IS MADE

Forest statistics in Florida were estimated from a double sampling scheme. A large number of points on aerial photos were examined and classified by land use. A much smaller subsample of these points was selected for examination on the ground. The detailed procedure was as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes were obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class was used to estimate the acreage. This estimate was later checked and revised through the use of ground plots.
2. Ground sample plots were selected in a systematic manner from the forest land classifications made in Step 1, using an interval which would provide sufficient plots to meet established limits of error per billion cubic feet of timber. This resulted in a proportional sample of all existing timber stands. Field crews recorded measurements and observations on several types of plots superimposed at each location. The basic plot was a variable plot with a basal area factor of 10 square feet per acre on which timber volume, quality, mortality, and crown density were recorded. The tally of timber cut and of wood naval stores stumps was made on a 1/5-acre circular plot. The tally of seed trees was made on a variable plot having a basal area factor of 3.14. Crown density and stocking of brush and seedlings were recorded on a line sample extending 1/2 chain north and south of plot center and from 10 quadrats of 1 milacre each along this line. Samples of photo land-use classifications other than forest land were also checked on the ground to verify or adjust the area estimates based on these classifications.
3. Growth estimates were based on increment borings taken on all tally trees 4.0 inches at d.b.h. and larger except live oak and palm. The volume of timber cut by product in 1958 was obtained from a production survey and from utilization studies. The breakdown of the timber cut by size was computed from a tally of the stumps of trees cut on the plots during a specified period.
4. All field data were sent to Asheville for editing and were placed on punch cards for machine computing, sorting, and tabulation. Final estimates were based on statistical summaries of the data.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Areas of one acre or more (a) which are at least 10 percent stocked with trees including seedlings and larger of both commercial and noncommercial species. Excludes vines, shrubs, etc., and (b) from which trees have been removed to less than 10 percent stocking but which have not been developed for other uses. Narrow strips less than 120 feet wide, even though area is an acre or more, are excluded. Also excludes areas around home sites and barns that are occupied by ornamental trees or trees used for shade. Orchard trees are not included in computations for stocking.

Commercial: Forest land which is (a) producing, or physically capable of producing, trees with one sound saw log at least 8 feet long, (b) economically accessible now or in the foreseeable future, (c) not withdrawn from timber utilization, such as parks and watersheds.

Noncommercial: All other forest land that does not qualify as commercial forest.

Unproductive: Noncommercial forest land which is not capable of producing trees with one sound saw log at least 8 feet long, or that are economically inaccessible.

Productive-reserved: Noncommercial forest land which is capable of producing trees with one sound saw log at least 8 feet long but which has been withdrawn from timber utilization, such as parks and watersheds.

Nonforest land: Includes all land not qualifying as forest and water areas under 40 acres, and strips of water less than 660 feet wide. Also includes improved (graded) roads and railroads.

Cropland: Nonforest land which has been cultivated within the past two years. Also includes tended orchards and yards of occupied farm homes. Excludes land being developed for permanent pasture even though it has been cultivated within the past two years.

Improved pasture: Nonforest areas that are fenced, are less than 10 percent stocked with trees, and show evidence that an attempt is being made to maintain a sod of forage species.

Idle or abandoned cropland: Includes cropland and orchards not cultivated or tended in the past two years, abandoned farm home sites, and nonforest land that no longer qualifies as improved pasture because of lack of maintenance.

Marsh or prairie: Low, wet areas characterized by heavy growth of reeds and grasses without tree growth. Also includes upland meadows or prairies where timber does not grow naturally.

Urban and other: Areas occupied by cities and towns, suburban areas developed for residential or industrial purposes, school yards, cemeteries, mines, quarries, airfields, roads, railroads, other cleared rights-of-way, and nonforested sand dunes and beaches. Excludes extensive areas of forested land within legal boundaries of cities and towns which have not been developed for other purposes and are available for production of timber. Includes town parks.

Ownership Classes

National forest: Includes Federally-owned land within the boundaries of the national forests.

Indian: Federal Indian reservations.

Bureau of Land Management: Includes public domain lands.

Other Federal: Includes military reservations, wildlife refuges, etc.

State: Includes state forests, etc.

County and municipal: Includes parks, watersheds, etc.

Pulp and paper companies: Includes land owned in fee simple by pulp and paper companies. Excludes leased lands.

Other wood-using industries: Includes land owned by all industries, except pulp and paper companies, that use round wood as raw material, such as sawmills, veneer plants, handle mills, etc.

Farm: Includes forest land on private farms defined as a privately-owned tract of land 3 acres or larger, exclusive of home garden products, producing agricultural products valued at $150; or a smaller tract producing and selling agricultural products for $150 or more per year. Agricultural products include field crops, vines, orchards, ornamental plants, rabbits, bees, fur-bearing animals, poultry, and common farm animals. Not included are "fish farms," fish hatcheries, "oyster farms," and "frog farms." Also includes forest land owned by a farmer but not producing agricultural products if the total area owned does not exceed 1,000 acres. Excludes farmer-owned areas that exceed 1,000 acres and less than 10 percent of the total is used to produce agricultural products.

Miscellaneous private: Includes all forest land on ownerships not included under the above classifications.

Stand Size

Heavy sawtimber stands: Stands containing a net volume of 5,000 board feet or more (Int. ¼-inch rule) per acre.

Light sawtimber stands: Stands containing a net volume of 1,500 but less than 5,000 board feet per acre.

Poletimber stands: Stands failing to qualify as sawtimber but at least 10 percent stocked with poletimber and sawtimber and with at least 5 percent of the stocking in poletimber.

Seedling and sapling stands: Stands not qualifying as sawtimber or poletimber but having at least 10 percent stocking of growing stock, and with at least 5 percent of the stocking in seedlings and saplings.

Nonstocked and other areas: Commercial forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands. Includes denuded areas and areas stocked with culls.

Stocking

Stocking is a measure of the degree to which growing space is effectively utilized by trees.

The stocking of trees tallied (trees 1.0 inch and larger) was based on crown measurements of sound, free-growing trees. Understory trees, trees with less than 50 percent of their crown area exposed to direct light from above, were not used in determining stocking. For softwoods, stocking was equal to 3 times the crown area for 2-inch saplings, 2 times the crown area for 4-inch saplings, and 1.7 times the crown area for trees 5.0 inches and larger. For hardwoods, stocking was equal to the crown area.

The stocking of sound seedlings is based on 10 quadrats of 1 milacre each along the 1-chain transect. Each stocked milacre quadrat completely free from overtopped trees 1.0 inch and larger counted as 10-percent stocking.

Well stocked: Areas 70 percent or better stocked with growing stock.

Medium stocked: Areas 40 to 70 percent stocked with growing stock.

Poorly stocked: Areas less than 40 percent stocked with growing stock.

Forest Types

Forest type is based on the crown density of live, free-growing trees from the variable plot tally and the free-growing seedlings from the line sample.

Softwood types: Stands with longleaf, slash, loblolly, spruce, pond, sand, or shortleaf pine and redcedar making up 50 percent or more of the crown density.

Oak-pine type: Stands with yellow pines or redcedar making up at least 25 percent but less than 50 percent of the crown density. The remaining cover is usually hardwoods, but may include cypress, other softwoods, or cabbage palmetto.

Hardwood types: Stands with yellow pines or redcedar making up less than 25 percent of the crown density.

Upland hardwood types: Hardwood stands with upland species such as oaks, hickory, yellow-poplar, and gum making up 50 percent or more of the hardwood crown density, but with scrub oak making up less than 50 percent of the hardwood crown density.

Scrub oak type: Hardwood stands with scrub oak making up 50 percent or more of the hardwood crown density.

Bench hardwood type: Hardwood stands in the choice bottomland or stream-margin sites with cherrybark oak, swamp chestnut oak, and shumard oak, sweetgum, yellow-poplar, and other associated species making up 50 percent or more of the hardwood crown density.

Water oak-gum type: Hardwood stands in moist riverbottom or stream margin sites with water oak, laurel oak, willow oak, elm, red maple, blackgum, and associated species making up 50 percent or more of the hardwood crown density. In the broad riverbottoms this type usually occupies the upper portion of the first bottom between the wet gum-cypress sites and the bench hardwood sites. In narrow riverbottoms it may be the only type present.

Gum-cypress type: Hardwood stands with water tupelo, blackgum, cypress, and whitecedar making up 50 percent or more of the hardwood crown density. Does not include upland stands with 50 percent or more of the crown density in blackgum.

Palm type: Stands with cabbage palmetto making up 50 percent or more of the crown density but with yellow pine or redcedar making up less than 25 percent of the crown density.

Flatwoods and uplands: Areas supporting pine, oak-pine, upland hardwood and scrub oak types.

Lowlands: Areas supporting bench hardwood, water oak-gum, gum-cypress and palm types.

Site Quality Classes

Site quality classes for pine and oak-pine types are determined from an index based on the height of the dominant and codominant trees at 50 years.

Poor site: Site index of 60 or less for loblolly pine type and site index of 50 or less for all other pine types and all oak-pine types, including oak-loblolly pine type.

Fair site: Site index of 70 for loblolly pine type and site index of 60 for all other pine types and all oak-pine types.

Good site: Site index of 80 or greater for loblolly pine type and site index of 70 or greater for all other pine types and all oak-pine types.

Site quality classes for hardwood types are based on the average length of the saw-log portion at maturity.

Poor site: Evidenced by stands of poor growth and scrubby form producing short-boled timber with an average length of one 16-foot log or less; usually found on dry sites or poorly drained flats with underlying hardpan.

Fair site: Evidenced by stands of average height and form where the trees may be expected to produce an average merchantable length of two 16-foot logs.

Good site: Evidenced by hardwood stands of the best form and species and capable of producing trees with a merchantable length of three 16-foot logs or more. Such sites are usually found in bottoms of deep, well-drained soils, although cypress and tupelo may be found growing on good sites in swampy, wet areas.

Area Condition Classes

Class 1: Areas 70 percent or more stocked with desirable trees.

Class 2: Areas 40 to 70 percent stocked with desirable trees and with less than 20 percent of the area controlled by inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Class 3: Areas 40 to 70 percent stocked with desirable trees but with 20 percent or more of the area controlled by less desirable cover such as poor growing stock, limited-use, rough and rotten trees or shrubs. Also includes all other areas 40 percent or more stocked with growing stock.

Class 4: Areas less than 40 percent stocked with growing stock and with adequate seed source and seedbed favorable to natural restocking. Includes upland and flatwood areas with at least 5 pine seed trees per acre and less than 20 percent of the area controlled by inhibiting vegetation.

Class 5: Areas less than 40 percent stocked with growing stock and with inadequate seed source and/or seedbed unfavorable to natural regeneration. Includes upland areas with less than 5 pine seed trees per acre and 20 percent or more of the area controlled by inhibiting vegetation, and all lowlands less than 40 percent stocked with growing stock.

Stand Treatment Classes

No treatment: Stands ready for harvest, stands in highly productive condition, and stands where there is little or no practical opportunity to increase harvest yields by cultural measures. Includes area condition classes 1, 2, and 4.

Stand improvement: Stands where cleaning, thinning, killing of cull trees, sanitation or salvage cutting, or pruning will be primarily effective in increasing yields of desirable trees. Includes area condition class 3.

Regeneration: Areas where planting, seeding, site preparation, removal of inhibiting vegetation, or other measures to obtain natural or artificial regeneration will be primarily effective in increasing yields of desirable trees. Includes condition class 5.

Class of Timber

Desirable trees: Trees of high vigor and low risk that do not have defects that limit their present or potential use for high-quality timber products such as veneer logs and choice saw logs.

Desirable sawtimber trees: Sawtimber trees which meet the following requirements:

1. Trees 15.0 inches d.b.h. or larger with at least 32 feet of saw-log portion free of rot, sweep, crook, or other defect

causing loss of board-foot volume. Trees under 15.0 inches d.b.h. with at least 24 feet of saw-log portion free of board-foot cull.

2. Softwood trees 15.0 inches d.b.h. or larger with one saw log 8 feet or longer qualifying as grade 2 or better. Softwood trees under 15.0 inches with one log qualifying as grade 3 or better. Hardwoods must have one log of grade 3 or better.
3. Trees that are vigorous and show no evidence of risk of mortality and have a complete crown of live limbs. Boles are neither hollow nor have an exposed rotten area over 4 inches in width. May include turpentined trees if they have not been idle or worked out as long as 5 years and do not have a burned turpentined face.

Desirable poletimber trees: Poletimber trees that meet the following requirements:

1. Trees free of stem deformities that would prevent having 24 feet of cull-free saw-log portion upon reaching sawtimber size.
2. Hardwood trees with at least an 8-foot stem section meeting the grade 3 requirements for clear cuttings.
3. Trees that are vigorous and have a complete crown of live limbs and have boles that are not hollow or contain exposed rotten wood.

Desirable seedlings and saplings: Includes trees of the following species unless so obviously deformed and defective or are on such a poor site that they are not expected to develop into sawtimber:

Longleaf pine
Slash pine
Spruce pine
Loblolly pine
Shortleaf pine
Pond pine
Cypress
Water tupelo
Yellow-poplar
Sweetgum
Magnolia
White oak
Swamp chestnut oak
Cherrybark oak
Shumard oak

Growing stock: Trees of commercial species that now or prospectively qualify as sawtimber. Includes desirable trees.

Sawtimber trees: Softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger of commercial species with board-foot defect not exceeding 50 percent of the gross volume in the saw-log portion. The tree must have an 8-foot log meeting the minimum requirements for log grade 4 (see tree grades in next section hereunder).

Saw-log portion: The section of the bole of a sawtimber tree from the stump to the upper limit of merchantability for saw logs. The upper limit is a fixed percent of d.b.h. except where, because of roughness or other defects, sections below the minimum top diameter fail to meet the minimum requirements for saw logs.

Upper stem: The section of the bole or main stem of a sawtimber tree extending from the top of the saw-log portion to a point 4.0 inches inside the bark.

Poletimber trees: Trees of commercial species from 5.0 inches d.b.h. up to sawtimber size which are expected to qualify as sawtimber.

Seedling and sapling trees: Trees of commercial species less than 5.0 inches d.b.h. which show promise of qualifying as sawtimber. Seedlings exclude longleaf pine that do not measure ½-inch at ground level, other softwoods less than 0.5 foot high, and hardwoods less than 1.0 foot high.

Sound cull trees: Live trees that do not qualify as growing stock but sound wood makes up 50 percent or more of the gross cubic-foot volume.

Rotten cull trees: Live trees that do not qualify as growing stock and sound wood makes up less than 50 percent of the gross cubic-foot volume.

Hardwood limbs: Includes section of limbs from the base of the bole to a point 4.0 inches inside the bark.

Salvable dead trees: Standing or down dead trees that are considered currently or potentially merchantable. This is obtained by multiplying the percent that the annual timber cut is of the total growing stock inventory by the total number of growing stock trees that die annually.

Tree Grades

Tree grades are based on the log grade of the butt log graded according to standards presented in:

1. Interim log grades for southern pine. South. Forest Expt. Sta., 18 pp. 1953.
2. Hardwood log grades for standard lumber: proposals and results. U. S. Forest Products Laboratory D1737. 1949.

Hardwood log grades include, in addition to the hardwood log grades for standard lumber, a grade 4 tie and timber log. A grade 4 hardwood log must be sound internally (cannot have a rotten center), and no single knot or group of knots within a 6-inch section of the log can exceed one-third the log diameter at that point. Rotten defects or holes can be present on the surface of the log, but they must not extend more than 3 inches into the potential tie or timber. Sweep departure cannot exceed one-fourth the log scaling diameter per 8 feet of length, and departure of crook cannot exceed 50 percent of the gross board-foot volume.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class: All trees were tallied by 0.1-inch diameter classes and tabulated by 2-inch diameter classes, each 2-inch class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch diameter class. Corresponding limits apply to other diameter classes.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International ¼-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs which are at least 4.0 inches in diameter inside bark is shown separately.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International ¼-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = 0.905\,(0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than 4 feet is 0.5 inch per 4-foot section. Allowance for saw kerf is ¼-inch.

Standard cord: The solid wood content, exclusive of bark, of a stacked pile 4 x 4 x 8 feet of round or split bolts. See "Conversion Factors" for cubic-foot content.

Growth and Timber Cut

Gross growth: The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year.

Mortality: The net volume in trees dying from natural causes during the year.

Net growth: Gross growth minus mortality.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut: The volume of timber cut by product for 1958 is based on a canvass of all wood-using industries in the State. The size breakdown of the cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the preceding 3-year period were measured. Timber cut from cull or dead trees is not included.

Conversion Factors

CUBIC FEET OF WOOD PER AVERAGE CORD
(EXCLUDING BARK)

D. b. h.	Pine	Cypress	Hardwoods
6	58.8	65.8	57.0
8	67.1	74.6	65.8
10	72.5	80.0	72.0
12	75.8	84.0	75.7
14	78.7	87.0	78.1
16	80.6	89.3	80.0
18	82.6	90.9	81.3
20	84.0	92.6	82.0
22	84.7	94.3	82.5
24	86.2	96.1	82.7
26	87.7	97.1	83.0
28	89.3	98.0	83.0
30	90.1	99.0	83.0
Average	71.6	74.4	74.1

BOARD FEET PER CUBIC FOOT OF GROWING STOCK
(ENTIRE STEM)

D. b. h.	Pine	Cypress	Hardwoods
10	4.60	3.38	--
12	4.62	3.80	4.13
14	4.86	4.23	4.33
16	5.14	4.65	4.62
18	5.31	4.80	4.69
20	5.38	5.09	4.78
22	5.90	5.26	5.03
24	6.30	5.36	4.58
26	5.90	5.77	5.54
Average	4.75	4.12	4.59

Agriculture Asheville

INDEX TO DETAILED TABLES

AREA

1. Land area, by class and Survey Unit
2. Commercial forest land, by ownership and Survey Unit
3. Commercial forest land, by ownership, stand size, and stocking
4. Commercial forest land, by ownership, major forest type, and stocking
5. Commercial forest land, by forest type and Survey Unit
6. Commercial forest land, by ownership, major forest type, and site quality
7. Commercial forest land, by ownership and area-condition classes
8. Commercial forest land, by area-condition and stand treatment needed for full productivity
9. Commercial forest land cut over annually, by ownership and Survey Unit

VOLUME

10. Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group
11. Net volume of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group
12. Net volume of sawtimber and growing stock on commercial forest land, by species group, stand size, and Survey Unit
13. Net volume of sawtimber and growing stock on commercial forest land, by species
14. Net volume of timber on commercial forest land, by species group and class of material
15. Net volume of sawtimber on commercial forest land, by diameter class and species
16. Net volume of growing stock on commercial forest land, by diameter class and species
17. Net volume of timber on commercial forest land, by diameter class, species group, and class of material
18. Net volume of sawtimber on commercial forest land, by species group and tree grade
19. Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class
20. Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group
21. Average net volume per acre of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group
22. Average net volume per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality.

GROWTH

23. Net annual growth, mortality, and cut of sawtimber and growing stock on commercial forest land, by ownership and species group
24. Annual mortality of sawtimber and growing stock on commercial forest land, by species group and cause of death
25. Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group
26. Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group
27. Average annual net growth per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality

UTILIZATION

28. Output of timber products from roundwood and plant residues, by product and species group
29. Output of timber products from roundwood, by source, product, and species group
30. Timber cut from sawtimber and growing stock, by product and species group
31. Disposition of timber cut from growing stock

COMPARISONS

32. Land area, by class and major forest type, 1934-1936, 1949, and 1959
33. Net volume of growing stock and cull timber, by diameter class and species group, 1934-1936, 1949, and 1959
34. Timber-growth projections, 1958 to 1989

COUNTY TABLES

35. County area, by class
36. Ownership of commercial forest land, by county
37. Net volume of sawtimber, by county and species group
38. Net volume of growing stock and cull timber, by species group and county

Table 1. --Land area,[1] by class and Survey Unit, Florida, 1959

(In thousand acres)

Land class	State	Northeast	Northwest	Central	South
ommercial forest land	19, 585. 8	7, 167. 2	5, 722. 0	4, 825. 1	1, 871. 5
oncommercial forest land:					
Unproductive	1, 337. 0	61. 3	16. 8	108. 8	1, 150. 1
Productive-reserved	93. 0	12. 4	4. 3	21. 9	54. 4
Total forest	21, 015. 8	7, 240. 9	5, 743. 1	4, 955. 8	3, 076. 0
onforest land:					
Cropland	2, 493. 6	667. 3	623. 9	927. 1	275. 3
Improved pasture	2, 383. 1	461. 6	188. 0	1, 229. 2	504. 3
Idle or abandoned cropland	1, 047. 3	397. 2	220. 9	241. 7	187. 5
Marsh or prairie[2]	6, 091. 3	456. 7	167. 4	1, 995. 3	3, 471. 9
Urban and other[3]	1, 786. 0	413. 0	315. 4	636. 5	421. 1
Total nonforest	13, 801. 3	2, 395. 8	1, 515. 6	5, 029. 8	4, 860. 1
ll land[4]	34, 817. 1	9, 636. 7	7, 258. 7	9, 985. 6	7, 936. 1

[1] From U. S. Bureau of the Census, land and water areas of the United ates, 1950.

[2] Includes 803, 600 acres of water according to Survey standards but efined by the Bureau of the Census as land area. Also includes 4, 500 acres marsh reported by the Bureau of the Census as water.

[3] Includes urban, suburban residential and industrial areas, rights-of-ay, cemeteries, schools, etc.

[4] Adjusted to include 4, 500 acres of marsh reported as water by the ureau of the Census and 97, 500 acres classified as water by the Bureau of e Census but as land by the Forest Survey. Also adjusted to exclude 12,700 res of Census water created since 1950.

Table 2. --Commercial forest land, by ownership and Survey Unit, Florida, 195

(In thousand acres)

Ownership class	State	Northeast	Northwest	Central	Sout
National forest	1, 027. 1	418. 3	542. 9	65. 9	
Other Federal:					
Indian	18. 9	--	-	--	18
Bureau of Land Management	2. 8	0. 4	0. 5	1. 9	
Other	588. 4	10. 7	497. 4	77. 5	2
Total	610. 1	11. 1	497. 9	79. 4	21
Other public:					
State	539. 6	150. 3	191. 2	114. 4	83
County and municipal	40. 8	9. 6	3. 7	10. 9	16
Total	580. 4	159. 9	194. 9	125. 3	100
Forest industry:					
Pulp company	3, 713. 9	2, 085. 1	1, 626. 2	2. 6	
Other wood-using industries	795. 9	450. 9	251. 6	93. 4	
Total	4, 509. 8	2, 536. 0	1, 877. 8	96. 0	
Farm	5, 374. 6	1, 285. 8	1, 017. 6	2, 508. 6	562
Miscellaneous private	7, 483. 8	2, 756. 1	1, 590. 9	1, 949. 9	1, 186
Total commercial	19, 585. 8	7, 167. 2	5, 722. 0	4, 825. 1	1, 871

Table 3. --Commercial forest land, by ownership, stand size, and stocking, Florida, 1959

(In thousand acres)

Stand size and stocking	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Heavy sawtimber stands:									
Well stocked	805. 0	67. 3	-	--	14. 2	26. 6	281. 3	161. 8	253. 8
Medium stocked	259. 2	19. 6	--	--	3. 5	15. 3	69. 9	57. 5	93. 4
Poorly stocked	55. 8	4. 1	--	-	—	--	12. 1	8. 9	30. 7
Total	1, 120. 0	91. 0	--	-	17. 7	41. 9	363. 3	228. 2	377. 9
Light sawtimber stands:									
Well stocked	1, 485. 6	142. 2	--	--	24. 5	51. 7	455. 4	370. 9	440. 9
Medium stocked	1, 119. 4	76. 1	--	--	21. 6	29. 7	350. 7	219. 1	422. 2
Poorly stocked	508. 7	22. 6	--	—	15. 9	27. 2	129. 3	142. 7	171. 0
Total	3, 113. 7	240. 9	--	-	62. 0	108. 6	935. 4	732. 7	1, 034. 1
Poletimber stands:									
Well stocked	1, 870. 7	146. 2	--	--	33. 2	44. 4	528. 0	367. 8	751. 1
Medium stocked	1, 411. 5	90. 4	4. 7	0. 1	43. 5	38. 7	386. 6	370. 3	477. 2
Poorly stocked	1, 205. 2	71. 8	--	1. 6	57. 6	41. 5	253. 8	323. 1	455. 8
Total	4, 487. 4	308. 4	4. 7	1. 7	134. 3	124. 6	1, 168. 4	1, 061. 2	1, 684. 1
Seedling and sapling stands:									
Well stocked	905. 2	79. 3	--	--	15. 1	27. 5	314. 9	159. 4	309. 0
Medium stocked	1, 066. 9	27. 3	--	0. 1	10. 2	37. 3	401. 8	244. 4	345. 8
Poorly stocked	1, 994. 1	115. 2	--	0. 4	51. 8	61. 5	441. 8	515. 9	807. 5
Total	3, 966. 2	221. 8	—	0. 5	77. 1	126. 3	1, 158. 5	919. 7	1, 462. 3
Nonstocked and other areas	6, 898. 5	165. 0	14. 2	0. 6	297. 3	179. 0	884. 2	2, 432. 8	2, 925. 4
All classes	19, 585. 8	1, 027. 1	18. 9	2. 8	588. 4	580. 4	4, 509. 8	5, 374. 6	7, 483. 8

Table 4.--Commercial forest land, by ownership, major forest type, and stocking, Florida, 1959

(In thousand acres)

Type and stocking	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Well stocked	2,771.0	361.1	--	--	71.8	113.4	960.4	390.4	873.9
Medium stocked	2,062.4	156.1	-	0.2	46.3	86.4	734.6	368.3	670.5
Poorly stocked	5,834.0	224.1	--	2.0	113.5	206.0	993.0	2,136.5	2,158.9
Total	10,667.4	741.3	--	2.2	231.6	405.8	2,688.0	2,895.2	3,703.3
Oak-pine type:									
Well stocked	301.3	3.6	--	-	--	4.2	111.1	107.8	74.6
Medium stocked	251.4	8.4	-	--	16.7	8.4	65.0	83.5	69.4
Poorly stocked	359.2	26.9	--	--	55.8	10.5	47.8	86.0	132.2
Total	911.9	38.9	-	--	72.5	23.1	223.9	277.3	276.2
Hardwood types:									
Well stocked	1,994.2	70.3	--	--	15.2	32.6	508.1	561.7	806.3
Medium stocked	1,605.3	52.6	4.7	--	15.8	27.0	412.9	455.9	636.4
Poorly stocked	4,407.0	124.0	14.2	0.6	253.3	91.9	676.9	1,184.5	2,061.6
Total	8,006.5	246.9	18.9	0.6	284.3	151.5	1,597.9	2,202.1	3,504.3
All types:									
Well stocked	5,066.5	435.0	—	--	87.0	150.2	1,579.6	1,059.9	1,754.8
Medium stocked	3,919.1	217.1	4.7	0.2	78.8	121.8	1,212.5	907.7	1,376.3
Poorly stocked	10,600.2	375.0	14.2	2.6	422.6	308.4	1,717.7	3,407.0	4,352.7
Total	19,585.8	1,027.1	18.9	2.8	588.4	580.4	4,509.8	5,374.6	7,483.8

Table 5.--Commercial forest land, by forest type and Survey Unit, Florida, 1959

(In thousand acres)

Forest type	State	Northeast	Northwest	Central	South
Softwood types:					
Longleaf pine	4,202.4	1,228.4	1,262.2	1,663.4	48.4
Slash pine	5,287.5	2,029.3	1,264.9	894.8	1,098.5
Loblolly pine	369.3	139.2	220.2	9.9	-
Shortleaf pine	38.9	9.4	22.3	7.2	-
Pond pine	347.3	203.2	104.8	39.3	--
Sand pine	422.0	262.4	47.6	103.7	8.3
Total	10,667.4	3,871.9	2,922.0	2,718.3	1,155.2
Hardwood types:					
Oak-pine	911.9	417.4	349.4	103.7	41.4
Oak-hickory:					
Upland hardwoods	699.2	278.7	293.3	127.2	--
Scrub oak	1,954.4	637.0	833.8	480.2	3.4
Oak-gum-cypress:					
Bench-hardwood	62.4	3.7	48.2	10.5	--
Water oak-gum	3,034.8	1,246.7	814.7	1/ 796.9	2/ 176.5
Gum-cypress	1,882.2	691.4	458.5	414.1	318.2
Total	8,544.9	3,274.9	2,797.9	1,932.6	539.5
Palm	373.5	20.4	2.1	174.2	176.8
All types	19,585.8	7,167.2	5,722.0	4,825.1	1,871.5

1/ Includes 1,500 acres of Australian pine type.

2/ Includes 3,000 acres of Australian pine type, and 9,600 acres of cajeput-tree type.

Table 6a. --Commercial forest land, by ownership, major forest type, and site quality, for the entire State of Florida, 1959

(In thousand acres)

Type and site quality[1]	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Poor site	2,402.0	222.1	--	1.6	89.2	68.5	202.9	1,075.5	742.2
Fair site	3,619.0	211.3	--	--	73.0	111.5	794.9	1,002.5	1,425.8
Good site	4,646.4	307.9	--	0.6	69.4	225.8	1,690.2	817.2	1,535.3
Total	10,667.4	741.3	--	2.2	231.6	405.8	2,688.0	2,895.2	3,703.3
Oak-pine type:									
Poor site	81.1	8.2	--	--	21.2	3.1	8.1	20.1	20.4
Fair site	303.1	15.1	--	--	39.0	0.1	65.0	77.9	106.0
Good site	527.7	15.6	--	--	12.3	19.9	150.8	179.3	149.8
Total	911.9	38.9	--	--	72.5	23.1	223.9	277.3	276.2
Hardwood types:									
Poor site	1,890.7	92.2	--	0.6	136.4	47.6	228.1	408.8	977.0
Fair site	4,716.7	101.0	18.9	--	129.9	82.6	914.7	1,486.8	1,982.8
Good site	1,399.1	53.7	--	--	18.0	21.3	455.1	306.5	544.5
Total	8,006.5	246.9	18.9	0.6	284.3	151.5	1,597.9	2,202.1	3,504.3
All types:									
Poor site	4,373.8	322.5	--	2.2	246.8	119.2	439.1	1,504.4	1,739.6
Fair site	8,638.8	327.4	18.9	--	241.9	194.2	1,774.6	2,567.2	3,514.6
Good site	6,573.2	377.2	--	0.6	99.7	267.0	2,296.1	1,303.0	2,229.6
Total	19,585.8	1,027.1	18.9	2.8	588.4	580.4	4,509.8	5,374.6	7,483.[illegible]

[1] See description of site quality under Definition of Terms.

Table 6b. --Commercial forest land, by ownership, major forest type, and site quality, Northeast Florida, 1959

(In thousand acres)

Type and site quality[1]	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Poor site	271.6	145.4	-	-	-	--	33.1	27.8	65.3
Fair site	981.7	70.4	--	-	4.3	37.7	346.1	163.4	359.8
Good site	2,618.6	124.2	--	0.4	1.9	91.2	1,104.3	341.9	954.7
Total	3,871.9	340.0	--	0.4	6.2	128.9	1,483.5	533.1	1,379.8
Oak-pine type:									
Poor site	--	--	--	-	-	-	-	-	
Fair site	128.2	3.7	--	--	--	0.1	50.9	29.9	43.6
Good site	289.2	4.7	-	--	--	-	93.1	101.8	89.6
Total	417.4	8.4	-	--	--	0.1	144.0	131.7	133.2
Hardwood types:									
Poor site	453.9	31.4	--	--	1.2	25.7	65.0	63.0	267.6
Fair site	1,700.7	4.7	--	--	3.3	1.3	542.2	449.7	699.5
Good site	723.3	33.8	--	-	--	3.9	301.3	108.3	276.0
Total	2,877.9	69.9	-	--	4.5	30.9	908.5	621.0	1,243.1
All types:									
Poor site	725.5	176.8	--	--	1.2	25.7	98.1	90.8	332.9
Fair site	2,810.6	78.8	--	--	7.6	39.1	939.2	643.0	1,102.9
Good site	3,631.1	162.7	--	0.4	1.9	95.1	1,498.7	552.0	1,320.3
Total	7,167.2	418.3	--	0.4	10.7	159.9	2,536.0	1,285.8	2,756.1

[1] See description of site quality under Definition of Terms.

Table 6c. --Commercial forest land, by ownership, major forest type, and site quality, Northwest Florida, 1959

(In thousand acres)

Type and site quality 1/	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Poor site	381.6	76.7	-	--	40.2	--	169.8	13.6	81.3
Fair site	1,016.1	126.3		--	64.2	25.3	440.4	104.3	255.6
Good site	1,524.3	169.1	--	0.2	59.8	99.0	559.5	293.9	342.8
Total	2,922.0	372.1	--	0.2	164.2	124.3	1,169.7	411.8	679.7
Oak-pine type:									
Poor site	51.5	8.2		-	21.2	--	8.1	4.9	9.1
Fair site	111.9	7.7	--	--	39.0	--	14.1	29.8	21.3
Good site	186.0	7.2	--	--	12.3	16.8	57.7	51.4	40.6
Total	349.4	23.1	--	--	72.5	16.8	79.9	86.1	71.0
Hardwood types:									
Poor site	699.9	38.8	--	0.3	134.6	8.4	160.4	45.7	311.7
Fair site	1,415.2	89.0		--	108.1	33.3	343.8	415.0	426.0
Good site	335.5	19.9	--	--	18.0	12.1	124.0	59.0	102.5
Total	2,450.6	147.7	-	0.3	260.7	53.8	628.2	519.7	840.2
All types:									
Poor site	1,133.0	123.7	--	0.3	196.0	8.4	338.3	64.2	402.1
Fair site	2,543.2	223.0		-	211.3	58.6	798.3	549.1	702.9
Good site	2,045.8	196.2	--	0.2	90.1	127.9	741.2	404.3	485.9
Total	5,722.0	542.9	-	0.5	497.4	194.9	1,877.8	1,017.6	1,590.9

1/ See description of site quality under Definition of Terms.

Table 6d. --Commercial forest land, by ownership, major forest type, and site quality, Central Florida, 1959

(In thousand acres)

Type and site quality 1/	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Poor site	1,076.3		--	1.6	46.8	6.1	--	749.4	272.4
Fair site	1,235.2	14.6	-	—	4.5	24.4	8.4	613.4	569.9
Good site	406.8	14.6	--	--	7.7	35.6	26.4	167.0	155.5
Total	2,718.3	29.2	-	1.6	59.0	66.1	34.8	1,529.8	997.8
Oak-pine type:									
Poor site	11.0			--	-	3.1	-	7.9	-
Fair site	47.6	3.7	--	—	--	--	--	18.2	25.7
Good site	45.1	3.7	--	--	--	3.1	--	22.8	15.5
Total	103.7	7.4	--	--	--	6.2	--	48.9	41.2
Hardwood types:									
Poor site	558.2	22.0	--	0.3		9.9	2.7	232.4	290.9
Fair site	1,143.9	7.3	--	--	18.5	37.8	28.7	568.4	483.2
Good site	301.0	--	--	--	-	5.3	29.8	129.1	136.8
Total	2,003.1	29.3	--	0.3	18.5	53.0	61.2	929.9	910.9
All types:									
Poor site	1,645.5	22.0	—	1.9	46.8	19.1	2.7	989.7	563.3
Fair site	2,426.7	25.6	--	--	23.0	62.2	37.1	1,200.0	1,078.8
Good site	752.9	18.3	-	--	7.7	44.0	56.2	318.9	307.8
Total	4,825.1	65.9	--	1.9	77.5	125.3	96.0	2,508.6	1,949.9

1/ See description of site quality under Definition of Terms.

Table 6e. --Commercial forest land, by ownership, major forest type, and site quality, South Florida, 1959

(In thousand acres)

Type and site quality[1]	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Poor site	672.5	--	--	--	2.2	62.4	--	284.7	323.2
Fair site	386.0	--	--	--	--	24.1	--	121.4	240.5
Good site	96.7	--	--	--	--	--	--	14.4	82.3
Total	1,155.2	--	--	--	2.2	86.5	--	420.5	646.0
Oak-pine type:									
Poor site	18.6	--	-	--	--	-	--	7.3	11.3
Fair site	15.4	--	--	-	--	--	--	--	15.4
Good site	7.4	--	--	--	--	--	--	3.3	4.1
Total	41.4	--	--	--	--	--	--	10.6	30.8
Hardwood types:									
Poor site	178.7	--	--	--	0.6	3.6	--	67.7	106.8
Fair site	456.9	--	18.9	--	--	10.2	--	53.7	374.1
Good site	39.3	--	--	--	--	--	--	10.1	29.2
Total	674.9	--	18.9	--	0.6	13.8	--	131.5	510.1
All types:									
Poor site	869.8	--	--	--	2.8	66.0	--	359.7	441.3
Fair site	858.3	--	18.9	--	--	34.3	--	175.1	630.0
Good site	143.4	--	--	--	--	--	--	27.8	115.6
Total	1,871.5	--	18.9	--	2.8	100.3	--	562.6	1,186.9

[1] See description of site quality under Definition of Terms.

Table 7. --Commercial forest land, by ownership and area-condition classes,[1] Florida, 1959

(In thousand acres)

Area-condition class	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
1	1,796.9	93.4	--	-	22.9	50.9	685.4	247.4	696.9
2	880.2	43.0	--	--	26.5	35.8	325.7	190.4	258.8
3	6,318.6	515.7	4.7	0.2	116.4	185.4	1,791.1	1,529.7	2,175.4
4	100.0	6.8	--	--	8.8	0.3	7.1	32.0	[illegible]
5	10,490.1	368.2	14.2	2.6	413.8	308.0	1,700.5	3,375.1	4,307.7
Total	19,585.8	1,027.1	18.9	2.8	588.4	580.4	4,509.8	5,374.6	7,483.8

[1] See description of area-condition classes under Definition of Terms.

-Commercial forest land, by area-condition and stand treatment needed for full productivity, Florida, 1959

(In thousand acres)

Area-condition class	Type of land	All areas	No treatment	Stand improvement	Regeneration: Without site preparation	Regeneration: With site preparation
	Flatwoods and uplands	1,460.8	1,460.8	--	--	--
	Lowlands	336.1	336.1	--	--	-
	Total	1,796.9	1,796.9	--	-	--
	Flatwoods and uplands	811.3	811.3	--	--	--
	Lowlands	68.9	68.9	-	--	--
	Total	880.2	880.2	--	--	--
	Flatwoods and uplands	3,444.3	--	3,444.3	--	--
	Lowlands	2,874.3	--	2,874.3	--	--
	Total	6,318.6	--	6,318.6	--	--
4	Flatwoods and uplands	100.0	100.0	--	--	--
	Lowlands	--	--	--	--	--
	Total	100.0	100.0	--	--	--
	Flatwoods and uplands	8,804.1	--	-	3,982.3	4,821.8
	Lowlands	1,686.0	--	--	312.2	1,373.8
	Total	10,490.1	--	--	4,294.5	6,195.6
All classes	Flatwoods and uplands	14,620.5	2 372.1	3,444.3	3,982.3	4,821.8
	Lowlands	4,965.3	405.0	2,874.3	312.2	1,373.8
	Total	19,585.8	2 777.1	6,318.6	4,294.5	6,195.6

Table 9.--Commercial forest land cut over annually, by ownership and Survey Unit, Florida, 1958

(In thousand acres)

Ownership	State	Northeast	Northwest	Central	Sout
Public	56.7	28.7	27.4	0.6	--
Private:					
Pulp company	149.5	90.0	59.5	--	--
Other wood-using industries	26.5	16.5	8.7	1.3	--
Farm	231.8	76.6	42.5	85.0	27.7
Miscellaneous private	239.5	106.5	53.6	58.0	21.4
Total	647.3	289.6	164.3	144.3	49.1
Total cut over	704.0	318.3	191.7	144.9	49.1

Table 10a.--Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 19

(In million board feet 1/)

Type and species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Softwood	8,345.8	1,053.1	--	--	177.0	511.9	2,591.6	1,560.4	2,451.8
Hardwood	141.7	3.8	--	--	--	--	22.7	62.2	53.0
Total	8,487.5	1,056.9	--	--	177.0	511.9	2,614.3	1,622.6	2,504.8
Oak-pine type:									
Softwood	1,289.4	47.3	--	--	51.9	17.7	498.0	385.2	289.3
Hardwood	228.6	--	--	--	1.8	--	109.9	64.1	52.8
Total	1,518.0	47.3	--	--	53.7	17.7	607.9	449.3	342.1
Hardwood types:									
Softwood	5,109.3	350.7	--	--	89.5	91.0	1,532.7	1,192.3	1,853.1
Hardwood	7,269.6	203.3	--	--	82.6	75.2	2,430.6	1,730.3	2,747.6
Total	12,378.9	554.0	--	--	172.1	166.2	3,963.3	2,922.6	4,600.7
All types:									
Softwood	14,744.5	1,451.1	--	--	318.4	620.6	4,622.3	3,137.9	4,594.2
Hardwood	7,639.9	207.1	--	--	84.4	75.2	2,563.2	1,856.6	2,853.4
Total	22,384.4	1,658.2	--	--	402.8	695.8	7,185.5	4,994.5	7,447.6

1/ International $\frac{1}{4}$-inch rule.

Table 10b.--Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1959

(In million board feet [1])

Type and species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Softwood	4,025.4	440.6	--	--	--	173.9	1,625.7	612.7	1,172.5
Hardwood	52.9	--	-		--	--	12.0	8.5	32.4
Total	4,078.3	440.6	--	--	--	173.9	1,637.7	621.2	1,204.9
Oak-pine type:									
Softwood	719.4	23.8	--	-	--	--	340.6	182.9	172.1
Hardwood	149.4	--	--	--	--	--	74.7	28.4	46.3
Total	868.8	23.8	--	--	-	--	415.3	211.3	218.4
Hardwood types:									
Softwood	2,025.0	122.2	--	--	--	5.9	917.8	364.6	614.5
Hardwood	3,174.0	81.6	--	--	-	14.4	1,124.6	708.3	1,245.1
Total	5,199.0	203.8	--	--	-	20.3	2,042.4	1,072.9	1,859.6
All types:									
Softwood	6,769.8	586.6	--	--	-	179.8	2,884.1	1,160.2	1,959.1
Hardwood	3,376.3	81.6	--	--	--	14.4	1,211.3	745.2	1,323.8
Total	10,146.1	668.2	--	--	--	194.2	4,095.4	1,905.4	3,282.9

[1] International ¼-inch rule.

Table 10c.--Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1959

(In million board feet [1])

Type and species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Softwood	3,117.7	594.0	--	--	162.9	230.3	922.9	535.7	671.9
Hardwood	85.6	3.8	--	--	-		9.5	51.7	20.6
Total	3,203.3	597.8	--	--	162.9	230.3	[illegible]	[illegible]	[illegible]
Oak-pine type:									
Softwood	452.8	17.7	--	-	51.9	12.2	157.4	[illegible]	[illegible]
Hardwood	75.8	--	--	-	1.8		35.2	34.2	4.6
Total	528.6	17.7	--	-	53.7	12.2	[illegible]	167.9	[illegible]
Hardwood types:									
Softwood	1,140.6	218.5	-	-	88.4	42.1	421.4	140.3	229.9
Hardwood	2,985.1	119.7	-	-	79.5	30.7	1,280.6	548.8	925.8
Total	4,125.7	338.2	-	-	167.9	72.8	1,702.0	[illegible]	1,155.7
All types:									
Softwood	4,711.1	830.2	-	-	303.2	284.6	1,501.7	809.7	981.7
Hardwood	3,146.5	123.5	--	--	81.3	30.7	1,325.3	634.7	951.0
Total	7,857.6	953.7	--	--	384.5	315.3	2,827.0	[illegible]	[illegible]

[1] International ¼-inch rule.

Table 10d. --Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1959

(In million board feet 1/)

Type and species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Softwood	862.5	18.5	--	-	7.1	92.8	43.0	313.1	388.0
Hardwood	3.2	--	--	--	--	--	1.2	2.0	--
Total	865.7	18.5	--	--	7.1	92.8	44.2	315.1	388.0
Oak-pine type:									
Softwood	82.4	5.8	--	-	--	5.5	--	43.7	27.4
Hardwood	3.4		--	--	--	--	--	1.5	1.9
Total	85.8	5.8	--	--	--	5.5	--	45.2	29.3
Hardwood types:									
Softwood	1,288.7	10.0	--	--	1.1	43.0	193.5	588.5	452.6
Hardwood	1,075.4	2.0	--	--	3.1	30.1	25.4	467.9	546.9
Total	2,364.1	12.0	--	--	4.2	73.1	218.9	1,056.4	999.5
All types:									
Softwood	2,233.6	34.3	--	--	8.2	141.3	236.5	945.3	868.0
Hardwood	1,082.0	2.0	-	--	3.1	30.1	26.6	471.4	548.8
Total	3,315.6	36.3	--	--	11.3	171.4	263.1	1,416.7	1,416.8

1/ International ¼-inch rule.

Table 10e. --Net volume of sawtimber on commercial forest land, by ownership, major forest type, and species group, South Florida, 1959

(In million board feet 1/)

Type and species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:									
Softwood	340.2	--	--	--	7.0	14.9	--	98.9	219.4
Hardwood	-	--		-	-	-	--	--	--
Total	340.2	--	--	-	7.0	14.9	--	98.9	219.4
Oak-pine type:									
Softwood	34.8	--	--	--	--	--	--	24.9	9.9
Hardwood	-			-		--	--	-	--
Total	34.8	--	--	--	--	--	--	24.9	9.9
Hardwood types:									
Softwood	655.0	--	-	--	--	--	--	98.9	556.1
Hardwood	35.1	--	-	--	--	-	--	5.3	29.8
Total	690.1	--	--	--	--	--	--	104.2	585.9
All types:									
Softwood	1,030.0	--	-	--	7.0	14.9	--	222.7	785.4
Hardwood	35.1	--	--	--	--	--	--	5.3	29.8
Total	1,065.1	--	--	--	7.0	14.9	--	228.0	815.2

1/ International ¼-inch rule.

Table 11a. --Net volume of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 1959

Type and species group	All ownerships		National forest		Indian		Bureau of Land Management		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																		
Pine types:																		
Softwood	3,019.6	42,055	375.3	5,325	--	--	0.1	2	69.0	981	130.7	1,796	886.8	12,541	520.0	7,177	1,037.7	14,233
Hardwood	57.9	798	1.9	27	--	--	--	--	0.8	14	0.3	5	14.4	203	20.4	272	20.1	277
Total	3,077.5	42,853	377.2	5,352	--	--	0.1	2	69.8	995	131.0	1,801	901.2	12,744	540.4	7,449	1,057.8	14,510
Oak-pine type																		
Softwood	339.1	4,498	12.8	174	--	--	--	--	14.0	191	6.1	83	143.1	1,876	95.1	1,263	68.0	911
Hardwood	96.0	1,359	2.7	45	--	--	--	--	1.9	29	1.0	16	29.7	402	34.9	500	25.8	367
Total	435.1	5,857	15.5	219	--	--	--	--	15.9	220	7.1	99	172.8	2,278	130.0	1,763	93.8	1,278
Hardwood types																		
Softwood	1,384.4	17,160	96.0	1,152	2.3	33	--	--	24.9	305	27.6	347	457.6	5,619	352.4	4,407	423.6	5,297
Hardwood	2,586.2	34,834	75.4	1,035	--	--	--	--	26.9	363	28.1	377	776.5	10,328	681.4	9,251	997.9	13,480
Total	3,970.6	51,994	171.4	2,187	2.3	33	--	--	51.8	668	55.7	724	1,234.1	15,947	1,033.8	13,658	1,421.5	18,777
All types:																		
Softwood	4,743.1	63,713	484.1	6,651	2.3	33	0.1	2	107.9	1,477	164.4	2,226	1,487.5	20,036	967.5	12,847	1,529.3	20,441
Hardwood	2,740.1	36,991	80.0	1,107	--	--	--	--	29.6	406	29.4	398	820.6	10,933	736.7	10,023	1,043.8	14,124
Total	7,483.2	100,704	564.1	7,758	2.3	33	0.1	2	137.5	1,883	193.8	2,624	2,308.1	30,969	1,704.2	22,870	2,573.1	34,565
Cull timber																		
Softwood	216.8	2,741	28.9	367	3.1	39	--	--	5.9	71	4.0	48	48.6	624	37.0	457	89.3	1,135
Hardwood	1/2,422.2	2/32,924	52.7	737	1.5	19	--	--	53.3	743	21.1	296	468.3	6,327	734.3	9,959	1,091.0	14,843
Total	2,639.0	35,665	81.6	1,104	4.6	58	--	--	59.2	814	25.1	344	516.9	6,951	771.3	10,416	1,180.3	15,978

1/ Includes 1,210.3 million cubic feet of palm.
2/ Includes 16,180 thousand cords of palm.

Table 11b. --Net volume of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1959

Type and species group	All ownerships		National forest		Indian		Bureau of Land Management		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																		
Pine types:																		
Softwood	1,303.0	18,338	169.6	2,420	--	--	--	--	--	--	38.7	528	543.7	7,687	171.4	2,390	379.6	5,313
Hardwood	24.6	335	--	--	--	--	--	--	--	--	--	--	9.0	128	2.8	37	12.8	170
Total	1,327.6	18,673	169.6	2,420	--	--	--	--	--	--	38.7	528	552.7	7,815	174.2	2,427	392.4	5,483
Oak-pine type																		
Softwood	206.3	2,771	4.2	83	--	--	--	--	--	--	--	--	104.4	1,375	51.4	685	46.3	623
Hardwood	49.2	681	--	--	--	--	--	--	--	--	--	--	17.6	236	11.2	159	20.4	286
Total	[illegible]	3,452	4.2	83	--	--	--	--	--	--	--	--	122.0	1,611	62.6	844	66.7	914
Hardwood types																		
Softwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	2.0	22	285.4	3,526	115.9	1,448	195.0	2,435
Hardwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	3.4	44	390.2	5,246	249.2	3,326	426.7	5,756
Total	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	5.4	66	675.6	8,772	365.1	4,774	621.7	8,191
All types:																		
Softwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	40.7	550	933.5	12,588	338.7	4,523	620.9	8,376
Hardwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	3.4	44	416.8	5,610	263.2	3,522	459.9	6,212
Total	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	44.1	594	1,350.3	18,198	601.9	8,045	1,080.8	14,588
Cull timber																		
Softwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	1.0	13	28.2	367	14.7	177	20.3	261
Hardwood	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	0.4	5	1.7	27	325.0	4,404	162.7	2,241	441.8	5,967
Total	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	0.4	5	2.7	40	353.2	4,771	177.4	2,418	462.1	6,228

1/ Includes [illegible] million cubic feet of palm.

Table 11c.--Net volume of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1959

Type and species group	All ownerships		National forest		Indian		Bureau of Land Management		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock																		
Pine types																		
Softwood	1,072.0	15,077	196.8	2,773	--	--	--	--	59.9	846	65.7	908	334.3	4,742	163.0	2,249	252.3	3,559
Hardwood	27.9	389	1.9	27	--	--	--	--	0.8	14	0.3	5	4.8	67	12.8	169	7.3	107
Total	1,099.9	15,466	198.7	2,800	--	--	--	--	60.7	860	66.0	913	339.1	4,809	175.8	2,418	259.6	3,666
Oak-pine type																		
Softwood	108.5	1,435	5.7	80	--	--	--	--	14.0	191	4.5	63	38.7	501	29.2	381	16.4	219
Hardwood	44.7	647	2.7	45	--	--	--	--	1.9	29	1.0	16	12.1	166	22.5	323	4.5	68
Total	153.2	2,082	8.4	125	--	--	--	--	15.9	220	5.5	79	50.8	667	51.7	704	20.9	287
Hardwood types																		
Softwood	327.2	4,048	65.3	790	--	--	--	--	24.5	300	11.0	140	120.3	1,476	43.8	573	62.3	769
Hardwood	1,050.5	14,165	43.7	605	--	--	--	--	25.9	350	16.4	226	373.7	4,907	259.1	3,609	331.7	4,468
Total	1,377.7	18,213	109.0	1,395	--	--	--	--	50.4	650	27.4	366	494.0	6,383	302.9	4,182	394.0	5,237
All types																		
Softwood	1,507.7	20,560	267.8	3,643	--	--	--	--	98.4	1,337	81.2	1,111	493.3	6,719	236.0	3,203	331.0	4,547
Hardwood	1,123.1	15,201	48.3	677	--	--	--	--	28.6	393	17.7	247	390.6	5,140	294.4	4,101	343.5	4,643
Total	2,630.8	35,761	316.1	4,320	--	--	--	--	127.0	1,730	98.9	1,358	883.9	11,859	530.4	7,304	674.5	9,190
Cull timber																		
Softwood	67.5	855	23.2	291	--	--	--	--	5.7	69	2.6	30	14.8	190	4.4	59	16.8	216
Hardwood	1/431.2	2/5,926	27.1	379	--	--	--	--	51.0	713	7.8	110	135.0	1,811	77.8	1,077	132.5	1,836
Total	498.7	6,781	50.3	670	--	--	--	--	56.7	782	10.4	140	149.8	2,001	82.2	1,136	149.3	2,052

1/ Includes 31.5 million cubic feet of palm

2/ Includes 419 thousand cords of palm.

Table 11d.--Net volume of growing stock and cull timber on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1959

Type and species group	All ownerships		National forest		Indian		Bureau of Land Management		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock																		
Pine types																		
Softwood	287.2	4,038	8.9	132	--	--	0.1	2	7.3	110	22.6	314	8.8	112	110.2	1,550	129.3	1,818
Hardwood	2.7	38	--	--	--	--	--	--	--	--	--	--	0.6	8	2.1	30	--	--
Total	289.9	4,076	8.9	132	--	--	0.1	2	7.3	110	22.6	314	9.4	120	112.3	1,580	129.3	1,818
Oak-pine type																		
Softwood	22.3	292	0.9	11	--	--	--	--	--	--	1.6	20	--	--	14.5	197	5.3	64
Hardwood	2.1	31	--	--	--	--	--	--	--	--	--	--	--	--	1.2	18	0.9	13
Total	24.4	323	0.9	11	--	--	--	--	--	--	1.6	20	--	--	15.7	215	6.2	77
Hardwood types																		
Softwood	428.0	5,313	2.1	27	--	--	--	--	0.4	5	14.6	185	51.9	617	192.7	2,386	166.3	2,093
Hardwood	421.0	5,684	2.2	35	--	--	--	--	1.0	13	8.3	107	12.6	175	173.1	2,316	223.8	3,038
Total	849.0	10,997	4.3	62	--	--	--	--	1.4	18	22.9	292	64.5	792	365.8	4,702	390.1	5,131
All types																		
Softwood	737.5	9,643	11.9	170	--	--	0.1	2	7.7	115	38.8	519	60.7	729	317.4	4,133	300.9	3,975
Hardwood	425.8	5,753	2.2	35	--	--	--	--	1.0	13	8.3	107	13.2	183	176.4	2,364	224.7	3,051
Total	1,163.3	15,396	14.1	205	--	--	0.1	2	8.7	128	47.1	626	73.9	912	493.8	6,497	525.6	7,026
Cull timber																		
Softwood	35.7	440	0.4	6	--	--	--	--	0.2	2	0.4	5	5.6	67	15.0	188	14.1	172
Hardwood	1/800.7	2/10,803	6.8	97	--	--	--	--	1.3	16	10.0	139	8.3	112	439.8	5,917	334.5	4,522
Total	836.4	11,243	7.2	103	--	--	--	--	1.5	18	10.4	144	13.9	179	454.8	6,105	348.6	4,694

1/ Includes [illegible] million cubic feet of palm.

2/ Includes 7,367 thousand cords of palm.

[illegible] land, by ownership, major forest type, and species group, South Florida, 1959

Type and species group	All ownerships		National forest		Indian		Bureau of Land Management		Other Federal		State, county, and municipal		Forest industry		Farm		Misc. private	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																		
Pine types:																		
Softwood	357.4	4,602	--	--	--	--	--	--	1.8	25	3.7	46	--	--	75.4	988	276.5	3,543
Hardwood	2.7	36	--	--	--	--	--	--	--	--	--	--	--	--	2.7	36	--	--
Total	360.1	4,638	--	--	--	--	--	--	1.8	25	3.7	46	--	--	78.1	1,024	276.5	3,543
Oak-pine type:																		
Softwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood types:																		
Softwood	2.3	33	--	--	2.3	33	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	15.7	218	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.7	218
Total	18.0	251	--	--	2.3	33	--	--	--	--	--	--	--	--	--	--	15.7	218
All types:																		
Softwood	359.7	4,635	--	--	2.3	33	--	--	1.8	25	3.7	46	--	-	75.4	988	276.5	3,543
Hardwood	18.4	254	--	--	--	--	--	--	--	--	--	--	--	--	2.7	36	15.7	218
Total	378.1	4,889	--	--	2.3	33	--	--	1.8	25	3.7	46	--	--	78.1	1,024	292.2	3,761
Cull timber:																		
Softwood	44.1	558	--	--	3.1	39	--	--	--	--	--	--	--	--	2.9	33	38.1	486
Hardwood	1/ 239.9	2/ 3,290	--	--	1.5	19	--	--	0.6	9	1.6	20	--	--	54.0	724	182.2	2,518
Total	284.0	3,848	--	--	4.6	58	--	--	0.6	9	1.6	20	--	--	56.9	757	220.3	3,004

1/ Includes 211.6 million cubic feet of palm.
2/ Includes 2,861 thousand cords of palm.

Table 12.--Net volume of sawtimber and growing stock on commercial forest land, by species group, stand size, and Survey Unit, Florida, 1959

Stand size	State			Northeast			Northwest			Central			South		
	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood	Total	Softwood	Hardwood
	SAWTIMBER (In million board feet)														
Sawtimber stands	19,105.9	12,260.1	6,845.8	8,738.4	5,714.1	3,024.3	6,852.1	3,943.9	2,908.2	2,661.0	1,771.9	889.1	854.4	830.2	24.2
Poletimber stands	1,906.7	1,391.6	515.1	838.9	622.2	216.7	631.0	459.1	171.9	328.8	209.7	119.1	108.0	100.6	7.4
Seedling and sapling stands	742.9	610.2	132.7	338.7	265.9	72.8	215.6	183.7	31.9	151.5	123.5	28.0	37.1	37.1	--
Nonstocked and other areas	628.9	482.6	146.3	230.1	167.6	62.5	158.9	124.4	34.5	174.3	128.5	45.8	65.6	62.1	3.5
Total	22,384.4	14,744.5	7,639.9	10,146.1	6,769.8	3,376.3	7,857.6	4,711.1	3,146.5	3,315.6	2,233.6	1,082.0	1,065.1	1,030.0	35.1
	GROWING STOCK (In million cubic feet)														
Sawtimber stands	5,418.8	3,256.5	2,162.3	2,462.5	1,530.1	932.4	1,924.2	1,013.3	910.9	790.7	481.1	309.6	241.4	232.0	9.4
Poletimber stands	1,689.2	1,209.0	480.2	701.7	502.4	199.3	592.0	408.3	183.7	285.4	194.7	90.7	110.1	103.6	6.5
Seedling and sapling stands	189.1	140.3	48.8	68.0	44.8	23.2	71.4	53.8	17.6	39.6	31.6	8.0	10.1	10.1	--
Nonstocked and other areas	165.6	117.3	48.3	58.3	40.9	17.4	43.2	32.3	10.9	47.6	30.1	17.5	16.5	14.0	2.5
Total	7,462.7	4,723.1	2,739.6	3,290.5	2,118.2	1,172.3	2,630.8	1,507.7	1,123.1	1,163.3	737.5	425.8	378.1	359.7	18.4
	GROWING STOCK (In thousand cords)														
Sawtimber stands	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25,461	13,326	12,135	10,151	6,017	4,134	2,964	2,836	128
Poletimber stands	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6,076	[illegible]	4,103	2,816	1,287	1,571	1,479	92
Seedling and sapling stands	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	314	[illegible]	[illegible]	[illegible]	--
Nonstocked and other areas	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	417	[illegible]	[illegible]	[illegible]	[illegible]	220	[illegible]	34

Table 13a. -Net volume of sawtimber and growing stock on commercial forest land, by species, for the entire State of Florida, 1959

Species	Sawtimber	Growing stock	
	Million bd. ft. 1/	Million cu. ft. 2/	Thousand cords 3/
Yellow pine:			
Longleaf pine	3,960.4	1,260.9	17,686
Slash pine	4,432.2	1,417.2	19,892
Loblolly pine	1,388.2	354.1	4,696
Pond pine	268.0	92.2	1,279
Other yellow pine	224.9	118.6	1,728
Total	10,273.7	3,243.0	45,281
Other softwoods:			
Cypress	4,394.8	1,465.0	17,987
Cedar	76.0	35.1	445
Total	4,470.8	1,500.1	18,432
Total softwoods	14,744.5	4,743.1	63,713
Preferred hardwoods:			
Sweetgum	667.1	260.6	3,525
Yellow-poplar	63.8	27.0	375
White and swamp chestnut oaks	94.7	22.9	298
Cherrybark and shumard oaks	32.1	6.7	85
Ash	418.6	166.1	2,297
Hard maple	7.6	4.1	57
Total	1,283.9	487.4	6,637
Other hardwoods:			
Tupelo and blackgum	2,059.0	722.7	9,707
Soft maple	389.1	169.0	2,344
Other white oaks	768 2	238.1	3,070
Other red oaks	1,653.6	552.2	7,424
Hickory	407.9	129.1	1,710
Beech	25.1	5.5	69
Holly, dogwood, persimmon	—	1.8	25
Other hardwoods	1,053.1	434.3	6,005
Total	6,356.0	2,252.7	30,354
Total hardwoods	7,639.9	2,740.1	36,991
All species	22,384.4	7,483.2	100,704

1/ International ¼-inch rule. 2/ Excludes bark. 3/ Includes bark.

Table 13b. --Net volume of sawtimber and growing stock on commercial for land, by species, Northeast Florida, 1959

Species	Sawtimber	Growing stock	
	Million bd. ft. 1/	Million cu. ft. 2/	Thousa cords
Yellow pine:			
Longleaf pine	1,779.1	513.1	7,134
Slash pine	2,247.4	742.5	10,48
Loblolly pine	625.7	157.9	2,10
Pond pine	176.5	56.8	78
Other yellow pine	71.1	59.1	89
Total	4,899.8	1,529.4	21,40
Other softwoods:			
Cypress	1,859.4	605.2	7,43
Cedar	10.6	3.6	4
Total	1,870.0	608.8	7,47
Total softwoods	6,769.8	2,138.2	28,87
Preferred hardwoods:			
Sweetgum	296.4	123.0	1,67
Yellow-poplar	5.9	2.7	3
White and swamp chestnut oaks	46.5	9.1	11
Cherrybark and shumard oaks	32.1	6.5	8
Ash	146.3	69.9	98
Hard maple	5.1	1.3	1
Total	532.3	212.5	2,9
Other hardwoods:			
Tupelo and blackgum	895.6	305.0	4,1
Soft maple	216.1	92.2	1,2
Other white oaks	410.7	122.2	1,5
Other red oaks	832.6	266.4	3,5
Hickory	114.9	41.1	5
Beech	-	--	
Holly, dogwood, persimmon		0.8	
Other hardwoods	374.1	132.6	1,8
Total	2,844.0	960.3	12,8
Total hardwoods	3,376.3	1,172.8	15,7
All species	10,146.1	3,311.0	44,6

1/ International ¼-inch rule. 2/ Excludes bark. 3/ Includes bark

Table 13c. --Net volume of sawtimber and growing stock on commercial forest land, by species, Northwest Florida, 1959

Species	Sawtimber	Growing stock	
	Million bd. ft. 1/	Million cu. ft. 2/	Thousand cords 3/
Yellow pine:			
Longleaf pine	1,746.3	608.1	8,603
Slash pine	1,286.2	408.0	5,693
Loblolly pine	729.4	188.6	2,500
Pond pine	58.8	25.7	359
Other yellow pine	142.4	44.1	603
Total	3,963.1	1,274.5	17,758
Other softwoods:			
Cypress	685.8	264.2	2,433
Cedar	62.2	29.0	369
Total	748.0	293.2	2,802
Total softwoods	4,711.1	1,567.7	20,560
Preferred hardwoods:			
Sweetgum	263.7	96.9	1,300
Yellow-poplar	54.5	23.6	329
White and swamp chestnut oaks	48.2	13.8	183
Cherrybark and shumard oaks	-	--	-
Ash	148.5	39.9	534
Hard maple	--	0.5	8
Total	514.9	174.7	2,354
Other hardwoods:			
Tupelo and blackgum	1,016.6	356.4	4,764
Soft maple	52.8	20.7	291
Other white oaks	216.7	69.3	922
Other red oaks	560.3	199.6	2,727
Hickory	252.9	76.5	1,006
Beech	25.1	5.5	69
Holly, dogwood, persimmon	--	1.0	14
Other hardwoods	507.2	219.4	3,054
Total	2,631.6	948.4	12,847
Total hardwoods	3,146.5	1,123.1	15,201
All species	7,857.6	2,630.8	35,761

1/ International ¼-inch rule. 2/ Excludes bark. 3/ Sound wood and bark.

Table 13d. --Net volume of sawtimber and growing stock on commercial [illegible]es land, by species, Central Florida, 1959

Species	Sawtimber	Growing sto	
	Million bd. ft. 1/	Million cu. ft. 2/	Tho nd cor 3/
Yellow pine:			
Longleaf pine	433.1	139.3	[illegible]
Slash pine	513.7	152.3	[illegible]
Loblolly pine	33.1	7.6	[illegible]
Pond pine	32.7	9.7	[illegible]
Other yellow pine	11.4	15.4	[illegible]
Total	1,024.0	324.3	[illegible]
Other softwoods:			
Cypress	1,206.4	410.7	[illegible]
Cedar	3.2	2.5	[illegible]
Total	1,209.6	413.2	[illegible]
Total softwoods	2,233.6	737.5	[illegible]
Preferred hardwoods:			
Sweetgum	107.0	40.7	[illegible]
Yellow-poplar	3.4	0.7	[illegible]
White and swamp chestnut oaks	--	--	-
Cherrybark and shumard oaks	--	0.2	[illegible]
Ash	123.8	56.3	[illegible]
Hard maple	2.5	2.3	[illegible]
Total	236.7	100.2	[illegible]
Other hardwoods:			
Tupelo and blackgum	146.8	61.2	[illegible]
Soft maple	114.1	50.1	[illegible]
Other white oaks	137.0	44.9	[illegible]
Other red oaks	235.5	75.8	[illegible]
Hickory	40.1	11.5	[illegible]
Beech	--	--	--
Holly, dogwood, persimmon	--	--	--
Other hardwoods	171.8	82.1	[illegible]
Total	845.3	325.6	[illegible]
Total hardwoods	1,082.0	425.8	[illegible]
All species	3,315.6	1,163.3	[illegible]

1/ International ¼-inch rule. 2/ Excludes bark. 3/ Includes ba

Table 13e.--Net volume of sawtimber and growing stock on commercial forest land, by species, South Florida, 1959

Species	Sawtimber	Growing stock	
	Million bd. ft. 1/	Million cu. ft. 2/	Thousand cords 3/
Yellow pine:			
Longleaf pine	[illegible]	0.4	5
Slash pine	384.9	114.4	1,589
Loblolly pine	-	-	-
Pond pine	--	-	--
Other yellow pine	--	--	
Total	386.8	114.8	1,594
Other softwoods:			
Cypress	643.2	244.9	3,041
Cedar	--	-	--
Total	643.2	244.9	3,041
Total softwoods	[illegible]	359.7	4,635
Preferred hardwoods:			
Sweetgum			--
Yellow-poplar	-		-
White and swamp chestnut oaks		-	--
Cherrybark and shumard oaks	--	-	-
Ash	-		-
Hard maple	-	-	-
Total		-	
Other hardwoods:			
Tupelo and blackgum	-	0.1	2
Soft maple	6.1	[illegible]	92
Other white oaks	3.8	1.7	[illegible]
Other red oaks	25.2	10.4	135
Hickory	--		
Beech	--	--	-
Holly, dogwood, persimmon		-	--
Other hardwoods	--	0.2	3
Total	35.1	18.4	254
Total hardwoods	35.1	18.4	254
All species	1,065.1	[illegible]	[illegible]

1/ International ¼-inch rule. 2/ Excludes bark. 3/ Includes bark.

Table 14a.--Net volume of timber on commercial forest land, by species group and class of material, for the entire State of Florida, 1959

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Sawtimber trees:						
Saw-log portion	3,807.7	47,518	2,588.8	32,333	1,218.9	15,185
Upper stem	1,280.8	16,867	725.2	9,659	555.6	7,208
Total	5,088.5	64,385	3,314.0	41,992	1,774.5	22,393
Poletimber trees	2,394.7	36,319	1,429.1	21,721	965.6	14,598
Total growing stock	7,483.2	100,704	4,743.1	63,713	2,740.1	36,991
Cull trees:						
Sound culls 1/						
Sawtimber-size trees	1,470.3	18,636	161.2	1,970	1,309.1	16,666
Poletimber-size trees	1,123.5	16,456	40.0	595	1,083.5	15,861
Total	2,593.8	35,092	201.2	2,565	2,392.6	32,527
Rotten culls	45.2	573	15.6	176	29.6	397
Total cull trees	2,639.0	35,665	216.8	2,741	2,422.2	32,924
Hardwood limbs	390.2	4,819	--	-	390.2	4,819
Salvable dead trees	1.3	17	1.3	17	--	--
All timber	10,513.7	141,205	4,961.2	66,471	5,552.5	74,734

1/ Includes volume of palm.

Table 14b.--Net volume of timber on commercial forest land, by species gr and class of material, Northeast Florida, 1959

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cor
Sawtimber trees:						
Saw-log portion	1,716.9	21,538	1,185.9	14,918	531.0	6,6
Upper stem	552.9	7,265	318.1	4,265	[illegible]	3,0
Total	2,269.8	28,803	1,504.0	19,183	765.8	9,6
Poletimber trees	1,041.2	15,855	634.2	9,692	407.0	6,1
Total growing stock	3,311.0	44,658	2,138.2	28,875	1,172.8	15,
Cull trees:						
Sound culls 1/						
Sawtimber-size trees	588.3	7,491	56.8	707	531.5	6,7
Poletimber-size trees	413.9	6,068	[illegible]	[illegible]	403.9	5,9
Total	1,002.2	13,559	66.8	859	935.4	12,7
Rotten culls	17.7	234	2.7	29	15.0	2
Total cull trees	1,019.9	[illegible]	69.5	888	950.4	12,9
Hardwood limbs	165.8	2,050		--	165.8	2,0
Salvable dead trees	0.8	11	0.8	11	--	
All timber	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1/ Includes volume of palm.

Table 14c.--Net volume of timber on commercial forest land, by species group and class of material, Northwest Florida, 1959

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Sawtimber trees:						
Saw-log portion	1,309.4	16,466	809.3	10,251	500.1	6,215
Upper stem	460.4	6,166	232.9	3,144	227.5	3,022
Total	1,769.8	22,632	1,042.2	13,395	727.6	9,237
Poletimber trees	861.0	13,129	465.5	7,165	395.5	5,964
Total growing stock	2,630.8	35,761	1,507.7	20,560	1,123.1	15,201
Cull trees:						
Sound culls:[1]						
Sawtimber-size trees	297.0	3,742	43.1	527	253.9	3,215
Poletimber-size trees	181.1	2,782	14.1	213	167.0	2,569
Total	478.1	6,524	57.2	740	420.9	5,784
Rotten culls	20.6	257	10.3	115	10.3	142
Total cull trees	498.7	6,781	67.5	855	431.2	5,926
Hardwood limbs	143.3	1,769	-	--	143.3	1,769
Salvable dead trees	0.1	2	0.1	2	--	--
All timber	3,272.9	44,313	1,575.3	21,417	1,697.6	22,896

[1] Includes volume of palm.

Table 14d.--Net volume of timber on commercial forest land, by species gro and class of material, Central Florida, 1959

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousa cord
Sawtimber trees:						
Saw-log portion	582.7	7,131	401.7	4,865	181.0	2,26
Upper stem	206.2	2,678	116.8	1,539	89.4	1,13
Total	788.9	9,809	518.5	6,404	270.4	3,40
Poletimber trees	374.4	5,587	219.0	3,239	155.4	2,34
Total growing stock	1,163.3	15,396	737.5	9,643	425.8	5,7
Cull trees						
Sound culls:[1]						
Sawtimber-size trees	454.7	5,763	30.7	370	424.0	5,3
Poletimber-size trees	377.1	5,426	4.0	59	373.1	5,3
Total	831.8	11,189	34.7	429	797.1	10,7
Rotten culls	4.6	54	1.0	11	3.6	
Total cull trees	836.4	11,243	35.7	440	800.7	10,8
Hardwood limbs	76.5	943	--	--	76.5	9
Salvable dead trees	0.2	2	0.2	2	--	
All timber	2,076.4	27,584	773.4	10,085	1,303.0	17.4

[1] Includes volume of palm.

Table 14e.--Net volume of timber on commercial forest land, by species group and class of material, South Florida, 1959

Class of material	Total		Softwood		Hardwood	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Sawtimber trees:						
Saw-log portion	198.7	2,383	191.9	2,299	6.8	84
Upper stem	61.3	758	57.4	711	3.9	47
Total	260.0	3,141	249.3	3,010	10.7	131
Poletimber trees	118.1	1,748	110.4	1,625	7.7	123
Total growing stock	378.1	4,889	359.7	4,635	18.4	254
Cull trees:						
Sound culls:[1]						
Sawtimber-size trees	130.3	1,640	30.6	366	99.7	1,274
Poletimber-size trees	151.4	2,180	11.9	171	139.5	2,009
Total	281.7	3,820	42.5	537	239.2	3,283
Rotten culls	2.3	28	1.6	21	0.7	7
Total cull trees	284.0	3,848	44.1	558	239.9	3,290
Hardwood limbs	4.6	57	—	--	4.6	57
Salvable dead trees	0.2	2	0.2	2	--	--
All timber	666.9	8,796	404.0	5,195	262.9	3,601

[1] Includes volume of palm.

Table 15.--Net volume of sawtimber on commercial forest land, by diameter class and species, Florida, 1959

(In million board feet)

Species	All classes	Diameter class (inches)				
		10	12	14	16-18	20+
Yellow pine						
Longleaf pine	3,960.4	1,820.6	1,355.4	548.3	225.6	10.5
Slash pine	4,432.2	1,559.0	1,302.6	817.4	628.2	125.0
Loblolly pine	1,388.2	210.2	310.5	279.5	427.4	160.6
Pond pine	268.0	79.9	79.0	52.2	38.5	18.4
Other yellow pine	224.9	35.0	63.9	44.1	71.1	10.8
Total	10,273.7	3,704.7	3,111.4	1,741.5	1,390.8	325.3
Other softwoods						
Cypress	4,394.8	870.7	1,118.6	945.9	894.4	565.2
Cedar	76.0	25.1	13.0	32.4	1.1	4.4
Total	4,470.8	895.8	1,131.6	978.3	895.5	569.6
Total softwoods	14,744.5	4,600.5	4,243.0	2,719.8	2,286.3	894.9
Preferred hardwoods						
Sweetgum	667.1	--	140.7	155.7	194.6	176.1
Yellow-poplar	53.8	--	18.3	12.3	28.6	4.6
White and swamp chestnut oaks	94.7	--	11.4	25.6	37.7	20.0
Cherrybark and shumard oaks	32.1	--	--	5.7	16.2	10.2
Ash	418.6	--	98.1	73.0	171.0	76.5
Hard maple	7.6	--	2.5	--	-	5.1
Total	1,283.9	--	271.0	272.3	448.1	292.5
Other hardwoods						
Tupelo and blackgum	2,059.0	--	393.1	450.5	643.3	572.1
Soft maple	389.1	--	84.7	108.2	118.1	78.1
Other white oaks	768.2	--	32.3	58.2	224.3	453.4
Other red oaks	1,653.6	--	299.5	337.2	381.1	635.8
Hickory	407.9	--	73.1	102.0	121.8	111.0
Beech	25.1	--	--	2.7	7.0	15.4
Holly, dogwood, persimmon	--	--	--	--	--	--
Other hardwoods	1,053.1	--	285.5	254.4	338.0	175.2
Total	6,356.0	--	1,168.2	1,313.2	1,833.6	2,041.0
Total hardwoods	7,639.9	--	1,439.2	1,585.5	2,281.7	2,333.5
All species	22,384.4	4,600.5	5,682.2	4,305.3	4,568.0	3,228.4
Salvable dead trees	5.9	1.7	1.5	1.3	1.3	0.1

Table 16.--Net volume of growing stock on commercial forest land, by diameter class and species, Florida, 1959

Species	All classes		Diameter class (inches) 6		8		10		12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Yellow pine																
Longleaf pine	1,260.9	[illegible]	104.[illegible]	1,[illegible]	[illegible]	4,[illegible]	382.[illegible]	[illegible]	[illegible]	3,8[illegible]	115.6	1,460	47.4	596	2.2	27
Slash pine	1,417.3	19,392	169.6	2,[illegible]	[illegible]	[illegible]	34[illegible]	4,706	[illegible].1	3,748	166.3	2,098	122.2	1,507	20.8	246
Loblolly pine	354.1	4,696	19.[illegible]	3[illegible]	[illegible]	[illegible]	61.4	[illegible]	69.5	910	57.2	738	80.0	991	29.4	346
Pond pine	[illegible]	1,279	8.9	1[illegible]	21.6	[illegible]	22.2	304	18.7	246	10.8	139	7.0	86	3.9	47
Other yellow pine	118.6	1,728	31.3	550	34.[illegible]	[illegible]	10.2	138	16.7	[illegible]	[illegible]	126	13.2	163	2.5	28
Total	[illegible]	45,281	352.0	5,666	722.5	[illegible]	[illegible]	11,256	[illegible]	[illegible]	360.8	4,561	269.8	3,333	58.3	694
Other softwoods																
Cypress	1,465.0	17,[illegible]	136.6	2,[illegible]	[illegible]	984	276.4	3,445	[illegible]	3,635	225.3	2,586	192.4	2,139	106.3	1,113
Cedar	[illegible]	445	4.9	72	10.8	143	6.4	[illegible]	3.6	43	8.2	94	0.5	5	0.7	8
Total	[illegible]	18,432	141.5	2,157	233.1	[illegible]	282.[illegible]	[illegible]	[illegible]	3,678	[illegible]	2,680	192.9	2,144	107.0	1,121
Total softwoods	4,743.1	63,713	473.5	7,823	955.6	[illegible]	1,099.9	14,751	991.3	12,678	594.3	7,241	462.7	5,477	165.8	1,815
Preferred hardwoods																
Sweetgum	260.6	3,525	16.2	288	24.4	324	49.2	680	35.8	482	41.1	525	47.9	596	36.0	430
Yellow-poplar	27.6	375	1.4	26	2.3	60	6.0	81	5.6	82	2.8	36	6.0	76	1.1	14
White and swamp chestnut oaks	22.9	298	0.2	4	1.9	36	1.8	26	2.8	39	5.8	74	7.2	89	3.1	36
Cherrybark and shumard oaks	6.7	85	--	--	0.2	3	--	--	--	--	1.3	17	2.2	28	3.0	37
Ash	166.1	2,297	19.9	350	34.2	456	25.0	340	23.5	310	18.4	234	33.8	415	15.3	182
Hard maple	4.1	57	0.1	2	0.4	6	1.6	22	0.7	10	--	--	--	--	1.3	17
Total	487.4	6,637	37.9	670	71.6	1,079	83.6	1,153	68.6	923	69.4	886	97.1	1,204	59.8	716
Other hardwoods																
Tupelo and blackgum	722.7	9,707	45.5	736	87.5	1,324	121.2	1,672	105.1	1,407	106.0	1,357	143.8	1,783	113.6	1,378
Soft maple	169.0	2,344	19.3	353	26.9	405	25.1	351	22.7	300	29.2	381	28.8	356	16.4	198
Other white oaks	238.1	3,070	8.5	153	14.0	231	19.4	272	14.0	187	19.1	246	59.3	740	102.9	1,241
Other red oaks	552.2	7,424	50.9	890	54.5	819	76.1	1,062	71.4	960	78.7	998	88.5	1,106	132.1	1,589
Hickory	129.1	1,710	6.6	137	13.1	198	11.6	161	19.1	257	27.3	344	28.2	354	23.8	289
Beech	5.5	69	--	--	0.5	8	--	--	--	--	0.7	9	1.5	19	2.8	33
Holly, dogwood, persimmon	1.8	25	--	--	--	--	1.8	25	--	--	--	--	--	--	--	--
Other hardwoods	434.3	6,005	44.8	782	62.6	952	82.5	1,139	73.4	996	60.5	777	73.8	913	36.9	446
Total	2,252.7	30,354	175.6	3,071	260.0	3,937	337.5	4,682	305.7	4,107	321.5	4,112	423.9	5,271	428.5	5,174
Total hardwoods	2,740.1	36,991	213.5	3,741	331.0	5,016	421.1	5,841	374.3	5,030	390.9	4,998	521.0	6,475	488.3	5,890
All species	7,483.2	100,704	687.0	11,564	1,286.6	18,924	1,521.0	20,622	1,365.6	17,708	985.2	12,239	983.7	11,952	654.1	7,705

Table [illegible].--Net volume of timber on commercial forest land, by diameter class, species group, and class of material, for the entire State of Florida, 1959

Species group and class of material	All classes		Diameter class (inches)													
			6		8		10		12		14		16-18		20	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																
Softwood	4,743.1	63,713	473.5	7,823	955.6	13,898	1,099.9	14,781	991.3	12,678	594.3	7,241	462.7	5,477	165.8	1,815
Hardwood	2,740.1	36,991	213.5	3,741	331.0	5,016	421.1	5,841	374.3	5,030	390.9	4,998	521.0	6,475	488.3	5,890
Total	7,483.2	100,704	687.0	11,564	1,286.6	18,914	1,521.0	20,622	1,365.6	17,708	985.2	12,239	983.7	11,952	654.1	7,705
Cull timber:																
Sound culls																
Softwood	201.2	2,565	19.6	313	20.4	282	61.0	787	36.9	456	26.7	317	23.2	266	13.4	141
Hardwood	1,182.3	16,347	155.2	2,714	154.5	2,349	177.5	2,482	194.5	2,571	144.2	1,841	188.2	2,349	168.2	2,044
Total	1,383.5	18,912	174.8	[illegible]	174.9	2,631	238.5	3,269	231.4	3,027	170.9	2,158	211.4	2,615	181.6	2,185
Palm	[illegible]	[illegible]	[illegible]	[illegible]	117.2	1,741	476.6	6,532	463.8	5,482	117.4	1,477	32.5	[illegible]	[illegible]	4
Rotten culls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.6	[illegible]	3.0	[illegible]	[illegible]	61	[illegible]	[illegible]	[illegible]	[illegible]
Total culls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9,848	698.2	9,046	[illegible]	3,696	249.1	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	[illegible]	[illegible]	46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]		[illegible]													
			[illegible]		[illegible]		[illegible]		12		14		16-18		20	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Thousand cords	[illegible]	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																
Softwood	[illegible]	[illegible]	216.9	[illegible]	117.3	6,089	[illegible]	7,064	[illegible]	6,267	260.8	3,185	178.4	[illegible]	48.8	542
Hardwood	[illegible]	[illegible]	[illegible]	[illegible]	157.4	[illegible]	171.1	[illegible]	166.6	[illegible]	164.5	2,101	215.6	2,676	[illegible]	2,646
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8,154	696.4	9,440	657.3	8,464	[illegible]	5,286	394.0	4,301	[illegible]	3,188
Cull timber:																
Sound culls																
Softwood	[illegible]	[illegible]	[illegible]	[illegible]	5.3	[illegible]	[illegible]	264	11.7	152	13.2	160	6.5	74	5.2	[illegible]
Hardwood	[illegible]	7,167	[illegible]	[illegible]	65.3	[illegible]	[illegible]	[illegible]	88.1	1,168	65.7	840	82.4	1,030	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,000	[illegible]	1,104	[illegible]	[illegible]
Palm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	430	[illegible]	2,166	[illegible]	2,271	41.2	519	11.4	142	--	--
Rotten culls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	41	[illegible]	18	1.0	[illegible]	2.1	26	1.4	17	6.2	73
Total culls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	101.7	1,263	78.3	444
Hardwood [illegible]	[illegible]	[illegible]	--	--	--	--	-	--	[illegible]	[illegible]	[illegible]	275	40.4	501	86.3	1,068

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	--	--
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10.1	[illegible]
Total culls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76.2	[illegible]
Hardwood limbs	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	894
All timber	[illegible]	44,311	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4,637

Table 17a. - Net volume of timber on commercial forest land by diameter class, species group, and class of material, Central Florida, 1959

Species group and class of material	All classes		Diameter class (inches)													
			6		8		10		12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock																
Softwood	737.5	9,643	71.2	1,159	147.8	2,080	162.6	2,161	140.0	1,761	96.7	1,141	86.5	989	32.7	352
Hardwood	425.8	5,753	32.6	568	57.1	871	63.[illegible]	909	61.9	812	58.1	754	70.3	875	80.1	964
Total	1,163.3	15,396	103.8	1,727	204.[illegible]	2,951	226.[illegible]	3,070	201.9	2,573	154.8	1,895	156.8	1,864	112.8	1,316
Cull timber:																
Sound culls:																
Softwood	34.7	429	2.0	32	2.[illegible]	27	11.1	153	8.4	98	2.4	28	5.6	66	2.2	25
Hardwood	245.7	3,393	35.3	615	22.7	498	33.3	456	45.7	532	24.5	308	37.6	463	37.6	461
Total	280.4	3,822	37.3	647	24.7	525	44.4	609	54.1	630	26.9	336	43.2	529	39.8	486
Palm	551.4	7,567	1.6	26	40.2	597	231.0	3,175	200.9	2,597	58.7	739	19.0	232	--	--
Rotten culls	4.6	54	0.1	4	0.3	4	0.[illegible]	5	0.2	4	0.2	3	1.1	12	2.1	22
Total culls	836.4	11,243	39.0	677	75.2	1,126	27[illegible]	[illegible]	255.[illegible]	3,291	85.8	1,078	63.3	774	41.9	508
Hardwood limbs	76.5	943	--	--	--	--	--	--	7.1	94	8.4	106	16.7	206	44.3	537
All timber	2,076.2	27,582	142.8	2,404	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 17e.--Net volume of timber on commercial forest land, by diameter class, species group, and class of material, South Florida, 1959

Species group and class of material	All classes		Diameter class (inches)													
			6		8		10		12		14		16-18		20+	
	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords	Million cu. ft.	Thousand cords
Growing stock:																
Softwood	359.7	4,635	46.2	722	64.2	903	75.3	971	67.8	834	50.4	589	29.6	340	26.2	276
Hardwood	18.4	254	2.2	40	2.8	44	2.7	39	1.6	21	2.9	36	3.5	43	2.7	31
Total	378.1	4,889	48.4	762	67.0	947	78.0	1,010	69.4	855	53.3	625	33.1	383	28.9	307
Cull timber:																
Sound culls																
Softwood	42.5	537	6.9	105	5.0	66	10.5	133	10.5	126	3.6	42	3.2	36	2.8	29
Hardwood	27.6	422	8.3	150	6.7	101	3.8	53	2.4	36	2.9	38	2.7	35	0.8	9
Total	70.1	959	15.2	255	11.7	167	14.3	186	12.9	162	6.5	80	5.9	71	3.6	38
Palm	211.6	2,861	0.6	12	45.1	668	75.0	1,025	73.7	941	15.1	189	1.8	22	0.3	4
Rotten culls	2.3	28	0.5	6	0.3	5	--	--	0.4	5	0.4	5	0.4	4	0.3	3
Total culls	284.0	3,848	16.3	273	57.1	840	89.3	1,211	87.0	1,108	22.0	274	8.1	97	4.2	45
Hardwood limbs	4.6	57	--	--	--	--	--	--	0.4	6	0.8	10	1.6	20	1.8	21
All timber	666.7	8,794	64.7	1,035	124.1	1,787	167.3	2,221	156.8	1,969	76.1	909	42.8	500	34.9	373

Table 18. --Net volume of sawtimber on commercial forest land, by species group and tree grade, Florida, 1959

(In million board feet)

Species group	All grades	Tree grade 1/			
		1	2	3	4
Softwoods:					
Pine	10,273.7	132.5	3,050.3	6,776.5	314.4
Cypress	4,394.8	348.1	1,956.1	1,950.9	139.7
Cedar	76.0	8.0	15.5	45.3	7.2
Total	14,744.5	488.6	5,021.9	8,772.7	461.3
Hardwoods:					
Tupelo and blackgum	2,059.0	648.4	796.6	578.4	35.6
Yellow-poplar	63.8	8.8	20.0	30.6	4.4
Sweetgum	667.1	173.7	253.5	209.9	30.0
Preferred oaks 2/	126.8	26.0	65.0	27.2	8.6
Other oaks	2,421.8	501.8	912.1	756.8	251.1
Hickory	407.9	110.5	152.4	127.5	17.5
All other hardwoods	1,893.5	386.5	710.4	704.6	92.0
Total	7,639.9	1,855.7	2,910.0	2,435.0	439.2
All species	22,384.4	2,344.3	7,931.9	11,207.7	900.5

1/ Tree grade based on log grade of butt log. (See Appendix for definition of log grade and butt log.)

2/ Includes Q. alba, Q. michauxii, Q. falcata var. pagodaefolia, and Q. shumardii.

Table 19a. --Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class, for the entire State of Florida, 1959

(In thousand trees)

Tree quality and species group	Total	Diameter class (inches)										
		2	4	6	8	10	12	14	16	18	20	22+
Growing stock:												
Softwood	2,786,211	1,338,541	682,176	345,140	205,649	111,538	62,343	25,522	9,355	3,523	1,472	952
Hardwood	2,059,238	1,307,153	389,360	154,099	85,232	52,245	27,635	18,965	10,806	5,773	3,664	4,306
Total	4,845,449	2,645,694	1,071,536	499,239	290,881	163,783	89,978	44,487	20,161	9,296	5,136	5,258
Sound culls:												
Softwood	126,573	61,883	27,973	16,234	6,263	8,662	2,748	1,543	628	369	148	122
Hardwood	1,945,098	1,390,863	309,208	121,929	52,905	30,389	18,780	9,381	5,421	2,543	1,514	2,165
Total	2,071,671	1,452,746	337,181	138,163	59,168	39,051	21,528	10,924	6,049	2,912	1,662	2,287
Rotten culls:												
Softwood	45,327	35,557	6,075	1,417	1,148	250	232	284	94	46	83	141
Hardwood	116,985	86,574	16,264	7,041	2,558	1,795	857	716	158	433	241	348
Total	162,312	122,131	22,339	8,458	3,706	2,045	1,089	1,000	252	479	324	489
Palm	94,506	--	-	1,563	18,707	40,260	27,382	5,553	840	189	12	--
Salvable dead trees	120	--	--	32	8	44	14	13	6	2	1	--
All trees	7,174,058	4,220,571	1,431,056	647,455	372,470	245,183	139,991	61,977	27,308	12,878	7,135	8,034

Table 19b. --Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class, Northeast Florida, 1959

(In thousand trees)

Tree quality and species group	Total	Diameter class (inches)										
		2	4	6	8	10	12	14	16	18	20	22+
Growing stock:												
Softwood	1, 429, 157	727, 198	356, 614	161, 222	86, 638	51, 343	29, 598	10, 863	3, 754	1, 163	501	263
Hardwood	972, 596	630, 385	181, 615	72, 688	35, 967	21, 426	12, 276	7, 874	4, 279	2, 522	1, 722	1, 842
Total	2, 401, 753	1, 357, 583	538, 229	233, 910	122, 605	72, 769	41, 874	18, 737	8, 033	3, 685	2, 223	2, 105
Sound culls:												
Softwood	38, 535	20, 889	7, 099	4, 417	1, 663	2, 671	787	652	161	97	60	39
Hardwood	660, 059	446, 568	113, 887	45, 571	21, 674	14, 883	8, 383	4, 281	2, 415	995	494	908
Total	698, 594	467, 457	120, 986	49, 988	23, 337	17, 554	9, 170	4, 933	2, 576	1, 092	554	947
Rotten culls:												
Softwood	28, 636	24, 258	4, 108	--	244	--	--	--	--	--	--	26
Hardwood	52, 061	36, 872	7, 262	4, 188	1, 538	791	359	534	67	147	147	156
Total	80, 697	61, 130	11, 370	4, 188	1, 782	791	359	534	67	147	147	182
Palm	26, 272	--	--	245	3, 644	12, 067	8, 551	1, 481	223	61	--	--
Salvable dead trees	82	--	--	32	8	22	9	6	5	--	--	--
All trees	3, 207, 398	1, 886, 170	670, 585	288, 363	151, 376	103, 203	59, 963	25, 691	10, 904	4, 985	2, 924	3, 234

Table 19c. --Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class, Northwest Florida, 1959

(In thousand trees)

Tree quality and species group	Total	Diameter class (inches)										
		2	4	6	8	10	12	14	16	18	20	22+
Growing stock:												
Softwood	710, 846	306, 314	179, 313	93, 351	65, 845	33, 871	18, 538	8, 196	3, 298	1, 322	455	343
Hardwood	750, 060	472, 200	137, 572	55, 943	33, 636	22, 231	10, 428	7, 890	4, 889	2, 342	1, 337	1, 592
Total	1, 460, 906	778, 514	316, 885	149, 294	99, 481	56, 102	28, 966	16, 086	8, 187	3, 664	1, 792	1, 935
Sound culls:												
Softwood	38, 239	19, 604	6, 822	5, 223	2, 497	2, 659	578	451	232	118	40	15
Hardwood	942, 078	739, 299	122, 484	41, 764	17, 174	9, 034	5, 261	3, 004	1, 766	948	603	741
Total	980, 317	758, 903	129, 306	46, 987	19, 671	11, 693	5, 839	3, 455	1, 998	1, 066	643	756
Rotten culls:												
Softwood	8, 216	4, 769	1, 418	705	412	159	180	245	94	46	83	105
Hardwood	42, 083	30, 536	7, 116	2, 134	864	591	380	75	65	130	65	127
Total	50, 299	35, 305	8, 534	2, 839	1, 276	750	560	320	159	176	148	232
Palm	2, 182	--	--	--	451	957	673	74	--	27	--	--
Salvable dead trees	11	--	--	--	--	8	--	[illegible]	[illegible]	--	--	--
All trees	2, 493, 715	1, 572, 722	454, 725	199, 120	120, 879	69, 510	36, 038	19, 938	10, 344	4, 933	2, 583	2, 923

Table 19d. --Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class, Central Florida, 1959

(In thousand trees)

Tree quality and species group	Total	Diameter class (inches)										
		2	4	6	8	10	12	14	16	18	20	22+
Growing stock:												
Softwood	421,653	203,649	93,532	54,691	36,217	17,510	9,193	4,051	1,651	721	242	196
Hardwood	314,001	192,175	64,176	23,387	14,535	8,148	4,772	3,000	1,547	860	565	836
Total	735,654	395,824	157,708	78,078	50,752	25,658	13,965	7,051	3,198	1,581	807	1,032
Sound culls:												
Softwood	14,489	4,882	4,882	1,605	531	1,552	580	167	171	63	33	23
Hardwood	289,573	176,116	58,853	27,910	11,763	5,692	4,788	1,872	1,145	526	417	491
Total	304,062	180,998	63,735	29,515	12,294	7,244	5,368	2,039	1,316	589	450	514
Rotten culls:												
Softwood	2,339	1,819	163	--	256	91	--	--	--	--	--	10
Hardwood	15,755	12,536	1,502	719	156	413	118	107	26	104	9	65
Total	18,094	14,355	1,665	719	412	504	118	107	26	104	9	75
Palm	39,835	--	--	506	6,052	18,343	11,529	2,821	497	87	--	--
Salvable dead trees	16	--	--	--	--	14	--	--	--	2	--	--
All trees	1,097,661	591,177	223,108	108,818	69,510	51,763	30,980	12,018	5,037	2,363	1,266	1,621

Table 19e. --Number of growing stock, cull, and salvable dead trees on commercial forest land, by species group and diameter class, South Florida, 1959

(In thousand trees)

Tree quality and species group	Total	Diameter class (inches)										
		2	4	6	8	10	12	14	16	18	20	22+
Growing stock:												
Softwood	224,555	101,380	52,717	35,876	16,949	8,814	5,014	2,412	652	317	274	150
Hardwood	22,581	12,393	5,997	2,081	1,094	440	159	201	91	49	40	36
Total	247,136	113,773	58,714	37,957	18,043	9,254	5,173	2,613	743	366	314	186
Sound culls:												
Softwood	35,310	16,508	9,170	4,989	1,572	1,780	803	273	64	91	15	45
Hardwood	53,388	28,880	13,984	6,684	2,294	780	348	224	95	74	--	25
Total	88,698	45,388	23,154	11,673	3,866	2,560	1,151	497	159	165	15	70
Rotten culls:												
Softwood	6,136	4,711	386	712	236	--	52	39	--	--	--	--
Hardwood	7,086	6,630	384	--	--	--	--	--	--	52	20	--
Total	13,222	11,341	770	712	236	--	52	39	--	52	20	--
Palm	26,217	--	--	812	8,560	8,893	6,629	1,177	120	14	12	--
Salvable dead trees	11	--	--	--	--	--	5	4	1	--	1	--
All trees	375,284	170,502	82,638	51,154	30,705	20,707	13,010	4,330	1,023	597	362	256

Table 20a.--Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 1959

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal[1]	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	782	1,420	--	757	1,262	964	539	662
Hardwood	13	5	--	--	--	8	21	14
Total	795	1,425	--	757	1,262	972	560	676
Oak-pine type:								
Softwood	1,414	1,220	--	716	765	2,225	1,388	1,047
Hardwood	251	--	--	25	--	491	231	191
Total	1,665	1,220	--	741	765	2,716	1,619	1,238
Hardwood types:								
Softwood	638	1,421	--	314	600	959	541	529
Hardwood	908	824	--	290	496	1,521	786	784
Total	1,546	2,245	--	604	1,096	2,480	1,327	1,313
All types:								
Softwood	753	1,413	--	539	1,069	1,025	584	614
Hardwood	390	202	--	143	130	568	345	381
Total	1,143	1,615	--	682	1,199	1,593	929	995

---

[1] Includes Bureau of Land Management.

Table 20b.--Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1959

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal[1]	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	1,040	1,296	--	--	1,349	1,096	1,149	850
Hardwood	14	--	--	--	--	8	16	23
Total	1,054	1,296	--	--	1,349	1,104	1,165	873
ak-pine type								
Softwood	1,723	2,840	--	--	--	2,366	1,388	1,292
Hardwood	358	--	--	--	--	519	216	348
Total	2,081	2,840	--	--	--	2,885	1,604	1,640
ardwood types:								
Softwood	704	1,750	--	--	191	1,010	587	494
Hardwood	1,103	1,168		--	466	1,238	1,141	1,002
Total	1,807	2,918	--	--	657	2,248	1,728	1,496
ll types:								
Softwood	945	1,402	--	--	1,124	1,137	902	711
Hardwood	471	195	-	--	90	478	580	480
Total	1,416	1,597	-	-	1,214	1,615	1,482	1 191

---

[1] Includes Bureau of Land Management.

Table 20c.--Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1959

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal[1]	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	1,067	1,596	--	992	1,853	789	1,301	988
Hardwood	29	10	--	--	--	8	125	30
Total	1,096	1,606	--	992	1,853	797	1,426	1,018
Oak-pine type:								
Softwood	1,296	767	--	716	727	1,971	1,553	1,125
Hardwood	217	--	--	25	--	441	397	65
Total	1,513	767	--	741	727	2,412	1,950	1,190
Hardwood types:								
Softwood	465	1,479	--	339	781	671	270	274
Hardwood	1,218	810	--	305	570	2,038	1,056	1,102
Total	1,683	2,289	--	644	1,351	2,709	1,326	1,376
All types:								
Softwood	823	1,529	--	610	1,460	800	796	617
Hardwood	550	227	--	163	157	706	624	598
Total	1,373	1,756	--	773	1,617	1,506	1,420	1,215

---

[1] Includes Bureau of Land Management.

Table 20d.--Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1959

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal[1]	State, county, and municipal	Forest industry	Farm	Misc privat
Pine types:								
Softwood	317	631	--	117	1,403	1,235	205	38
Hardwood	1	--	--	--	--	34	1	-
Total	318	631	--	117	1,403	1,269	206	38
Oak-pine types:								
Softwood	795	792	--	--	884	--	893	66
Hardwood	33	-	--	-	--	--	31	4
Total	828	792	--	--	884	--	924	7
Hardwood types:								
Softwood	643	341	--	58	811	3,164	633	49
Hardwood	537	68	--	164	568	415	503	60
Total	1,180	409	--	222	1,379	3,579	1,136	1,09
All types:								
Softwood	463	520	--	103	1,127	2,464	377	44
Hardwood	224	30	--	39	240	277	188	28
Total	687	550	--	142	1,367	2,741	565	72

---

[1] Includes Bureau of Land Management.

Table 20e.--Average net sawtimber volume per acre on commercial forest land, by ownership, major forest type, and species group, South Florida, 1959

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal [1]	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	294	--	--	([2])	172	--	235	340
Hardwood	--	--	--	-	--	--	--	--
Total	294	--	--	([2])	172	--	235	340
Oak-pine types:								
Softwood	840	--	--	--	--	-	2,332	322
Hardwood	--	--	--	--	--	--	-	--
Total	840	--	-	-	--	--	2,332	322
Hardwood types:								
Softwood	971	--	-	--	--	--	753	1,090
Hardwood	52	--	-	--	--	-	40	58
Total	1,023	-	-	--	-	--	793	1,148
All types:								
Softwood	550	--	--	([2])	149	--	396	662
Hardwood	19	--	--	-	--	-	9	25
Total	569	-	--	([2])	149	--	405	687

[1] Includes Bureau of Land Management.

[2] Excluded because of excessive sampling error

Table 21a. --Average net volume per acre of growing stock and cull timber [1] on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 1959

Forest type, species group, and class of material	All ownerships		National forest		Indian		Other Federal [2]		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine type:																
Growing stock:																
Softwood	283.1	3.9	506.2	7.2	--	--	295.7	4.2	322.1	4.4	329.9	4.7	179.6	2.5	280.2	3.8
Hardwood	5.4	0.1	2.6	(3/)	--	--	3.4	0.1	0.7	(3/)	5.4	0.1	7.0	0.1	5.4	0.1
Total	288.5	4.0	508.8	7.2	--	--	299.1	4.3	322.8	4.4	335.3	4.8	186.6	2.6	285.6	3.9
Cull timber:																
Softwood	5.9	0.1	12.4	0.2	--	--	15.5	0.2	2.5	(3/)	5.4	0.1	4.0	0.1	6.1	0.1
Hardwood	9.2	0.1	0.5	(3/)	--	--	19.0	0.3	0.5	(3/)	3.6	(3/)	6.3	0.1	17.8	0.2
Total	15.1	0.2	12.9	0.2	-	--	34.5	0.5	3.0	(3/)	9.0	0.1	10.3	0.2	23.9	0.3
Oak-pine type:																
Growing stock:																
Softwood	371.9	4.9	330.1	4.5	--	--	193.0	2.6	263.5	3.6	639.4	8.4	342.8	4.6	246.2	3.3
Hardwood	105.3	1.5	69.6	1.2	--	--	26.2	0.4	43.2	0.7	132.7	1.8	125.8	1.8	93.4	1.3
Total	477.2	6.4	399.7	5.7	-	--	219.2	3.0	306.7	4.3	772.1	10.2	468.6	6.4	339.6	4.6
Cull timber:																
Softwood	11.4	0.2	28.4	0.4	--	--	2.8	(3/)	--	--	22.3	0.3	10.8	0.1	4.0	0.1
Hardwood	137.8	1.9	25.8	0.5	--	--	49.6	0.7	25.9	0.4	107.2	1.5	250.5	3.4	97.8	1.4
Total	149.2	2.1	54.2	0.9	--	--	52.4	0.7	25.9	0.4	129.5	1.8	261.3	3.5	101.8	1.5
Hardwood types:																
Growing stock:																
Softwood	172.9	2.1	388.9	4.7	121.7	1.7	87.6	1.1	182.0	2.3	286.4	3.5	160.0	2.0	120.9	1.5
Hardwood	323.0	4.4	305.4	4.2	--	--	94.6	1.3	185.3	2.5	485.9	6.5	309.5	4.2	284.8	3.8
Total	495.9	6.5	694.3	8.9	121.7	1.7	182.2	2.4	367.3	4.8	772.3	10.0	469.5	6.2	405.7	5.3
Cull timber:																
Softwood	18.0	0.2	75.3	0.9	164.0	2.1	7.4	0.1	19.8	0.2	18.1	0.2	10.2	0.1	18.7	0.2
Hardwood	274.5	3.7	207.8	2.9	79.4	1.0	159.4	2.2	133.9	1.9	272.0	3.7	293.7	4.0	284.8	3.9
Total	[illegible]	[illegible]	283.1	3.8	243.4	3.1	166.8	2.3	153.7	2.1	290.1	3.9	303.9	4.1	303.5	4.1
All types:																
Growing stock:																
Softwood	242.2	3.3	471.3	6.5	121.7	1.7	182.7	2.5	283.2	3.8	329.8	4.4	180.0	2.4	204.3	2.7
Hardwood	139.9	1.9	77.9	1.1			50.1	0.7	50.6	0.7	182.0	2.4	137.1	1.9	139.5	1.9
Total	382.1	5.2	549.2	7.6	121.7	1.7	232.8	3.2	333.8	4.5	511.8	6.8	317.1	4.3	343.8	4.6
Cull timber:																
Softwood	11.1	0.1	28.1	0.4	164.0	2.1	10.0	0.1	6.9	0.1	10.8	0.1	6.9	0.1	11.9	0.2
Hardwood	123.7	1.7	51.3	0.7	79.4	1.0	90.6	1.3	36.3	0.5	103.8	1.4	136.6	1.9	145.8	2.0
Total	134.8	1.8	79.4	1.1	243.4	3.1	100.6	1.4	43.2	0.6	114.6	1.5	143.5	2.0	157.7	2.2
All timber	516.9	7.0	628.6	8.7	365.1	4.8	333.4	4.6	377.0	5.1	626.4	8.3	460.6	6.3	501.5	6.8

[1] Includes volume of palm.
[2] Includes Bureau of Land Management.
[3] Less than 0.05 cord per acre.

Table 21b. --Average net volume per acre of growing stock and cull timber[1] on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1959

Forest type, species group, and class of material	All ownerships		National forest		Indian		Other Federal [2]		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Growing stock:																
Softwood	336.5	4.7	498.8	7.1	--	--	--	--	300.3	4.1	366.5	5.2	321.5	4.5	275.1	3.9
Hardwood	6.4	0.1	--	--	--	--	--	--	--	--	6.1	0.1	5.3	0.1	9.3	0.1
Total	342.9	4.8	498.8	7.1	--	--	--	--	300.3	4.1	372.6	5.3	326.8	4.6	284.4	4.0
Cull timber:																
Softwood	8.1	0.1	12.9	0.2	--	--	--	--	7.8	0.1	6.9	0.1	8.3	0.1	8.0	0.1
Hardwood	8.4	0.1	--	--	--	--	--	--	--	--	3.0	(3/)	6.4	0.1	17.9	0.2
Total	16.5	0.2	12.9	0.2	--	--	--	--	7.8	0.1	9.9	0.1	14.7	0.2	25.9	0.3
Oak-pine type:																
Growing stock:																
Softwood	499.0	6.6	739.9	9.9	--	--	--	--	--	--	725.2	9.6	390.1	5.2	347.6	4.7
Hardwood	117.9	1.6	--	--	--	--	--	--	--	--	122.3	1.6	85.0	1.2	153.2	2.1
Total	616.9	8.2	739.9	9.9	--	--	--	--	--	--	847.5	11.2	475.1	6.4	500.8	6.8
Cull timber:																
Softwood	14.9	0.2	107.4	1.3	--	--	--	--	--	--	22.9	0.3	15.2	0.2	--	--
Hardwood	206.0	2.8	--	--	--	--	--	--	--	--	143.1	2.0	397.0	5.5	98.4	1.4
Total	220.9	3.0	107.4	1.3	--	--	--	--	--	--	166.0	2.3	412.2	5.7	98.4	1.4
Hardwood types:																
Growing stock:																
Softwood	217.8	2.7	409.5	4.8	--	--	--	--	64.7	0.7	314.1	3.9	186.7	2.3	156.9	2.0
Hardwood	381.9	5.1	422.4	5.7	--	--	--	--	110.0	1.4	429.5	5.8	401.3	5.4	343.3	4.6
Total	599.7	7.8	831.9	10.5	--	--	--	--	174.7	2.1	743.6	9.7	588.0	7.7	500.2	6.6
Cull timber:																
Softwood	11.2	0.1	--	--	--	--	--	--	--	--	16.1	0.2	13.4	0.1	7.4	0.1
Hardwood	289.1	3.9	269.2	3.7	--	--	88.7	1.1	55.0	0.9	330.2	4.5	172.3	2.4	325.0	4.4
Total	300.3	4.0	269.2	3.7	--	--	88.7	1.1	55.0	0.9	346.3	4.7	185.7	2.5	332.4	4.5
All types:																
Growing stock:																
Softwood	298.3	4.0	488.7	6.8	--	--	--	--	254.5	3.4	368.1	5.0	263.4	3.5	225.3	3.0
Hardwood	163.6	2.2	70.5	0.9	--	--	--	--	21.3	0.3	164.4	2.2	204.7	2.7	166.9	2.3
Total	461.9	6.2	559.2	7.7	--	--	--	--	275.8	3.7	532.5	7.2	468.1	6.2	392.2	5.3
Cull timber:																
Softwood	9.7	0.1	12.7	0.2	--	--	--	--	6.3	0.1	11.1	0.1	11.4	0.1	7.4	0.1
Hardwood	132.6	1.8	44.9	0.6	--	--	36.1	0.5	10.6	0.2	128.2	1.7	126.5	1.7	160.3	2.2
Total	142.3	1.9	57.6	0.8	--	--	36.1	0.5	16.9	0.3	139.3	1.8	137.9	1.8	167.7	2.3
All timber	604.2	8.1	616.8	8.5	--	--	36.1	0.5	292.7	4.0	671.8	9.0	606.0	8.0	559.9	7.6

[1] Includes volume of palm.
[2] Includes Bureau of Land Management.
[3] Less than 0.05 cord per acre.

Table 21c. --Average net volume per acre of growing stock and cull timber 1/ on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1959

Forest type, species group, and class of material	All ownerships		National forest		Indian		Other Federal 2/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Growing stock:																
Softwood	366.9	5.2	528.9	7.5	--	--	364.9	5.2	528.7	7.3	285.8	4.1	395.8	5.5	371.2	5.2
Hardwood	9.5	0.1	[illegible]	0.1	-	-	4.9	0.1	2.4	(3/)	4.1	0.1	31.1	0.4	10.7	0.2
Total	376.4	5.3	[illegible]	7.6	--	--	369.8	5.3	531.1	7.3	289.9	4.2	426.9	5.9	381.9	5.4
Cull timber:																
Softwood	7.3	0.1	11.8	0.2	--	--	21.9	0.3	--	-	3.7	0.1	6.8	0.1	9.3	0.1
Hardwood	4.8	0.1	1.1	(3/)	-	--	26.8	0.4	--	--	3.7	0.1	5.6	0.1	3.7	0.1
Total	12.1	0.2	12.9	0.2	--	--	48.7	0.7	--	--	7.4	0.2	12.4	0.2	13.0	0.2
Oak-pine types:																
Growing stock:																
Softwood	310.6	4.1	247.1	3.5	-	-	193.0	2.6	268.3	3.8	484.6	6.3	339.2	4.4	230.8	3.1
Hardwood	127.9	1.9	117.0	2.0	--	--	26.2	0.4	59.6	1.0	151.5	2.1	261.4	3.8	63.3	1.0
Total	438.5	6.0	364.1	5.5	--	--	219.2	3.0	327.9	4.8	636.1	8.4	600.6	8.2	294.1	4.1
Cull timber:																
Softwood	9.2	0.1	8.7	0.1	--	--	2.8	(3/)	--	--	21.3	0.3	--	--	15.5	0.2
Hardwood	54.4	0.8	43.3	0.8	--	--	49.6	0.7	--	--	42.6	0.7	99.9	1.4	33.8	0.5
Total	63.6	0.9	52.0	0.9	--	--	52.4	0.7	--	-	63.9	1.0	99.9	1.4	49.3	0.7
Hardwood types:																
Growing stock:																
Softwood	133.5	1.7	442.0	5.3	--	--	94.0	1.2	204.1	2.6	191.5	2.3	84.3	1.1	74.2	0.9
Hardwood	428.7	5.8	295.8	4.1	--	--	99.3	1.3	304.3	4.2	594.8	7.8	498.5	6.9	394.8	5.3
Total	562.2	7.5	737.8	9.4	-	--	193.3	2.5	508.4	6.8	786.3	10.1	582.8	8.0	469.0	6.2
Cull timber:																
Softwood	17.5	0.2	125.9	1.5	--	--	7.3	0.1	48.3	0.6	14.0	0.2	3.1	(3/)	11.2	0.1
Hardwood	162.5	2.2	174.0	2.4	-	-	164.9	2.3	144.8	2.0	202.6	2.7	128.7	1.8	151.9	2.1
Total	180.0	2.4	299.9	3.9	-	--	172.2	2.4	193.1	2.6	216.6	2.9	131.8	1.8	163.1	2.2
All types:																
Growing stock:																
Softwood	263.5	3.6	493.3	6.7	--	--	197.8	2.7	416.6	5.7	262.7	3.6	231.9	3.1	208.1	2.9
Hardwood	196.3	2.7	89.0	1.2	--	--	57.5	0.8	90.8	1.3	208.0	2.7	289.3	4.0	215.9	2.9
Total	459.8	6.3	582.3	7.9	--	--	255.3	3.5	507.4	7.0	470.7	6.3	521.2	7.1	424.0	5.8
Cull timber:																
Softwood	11.8	0.1	42.7	0.5	--	--	11.5	0.1	13.3	0.2	7.9	0.1	4.3	0.1	10.6	0.1
Hardwood	75.4	1.0	49.9	0.7	--	--	102.5	1.4	40.0	0.6	71.9	1.0	76.5	1.1	83.3	1.2
Total	87.2	1.1	92.6	1.2	--	--	114.0	1.5	53.3	0.8	79.8	1.1	80.8	1.2	93.9	1.3
All timber	547.0	7.4	674.9	9.1	--	--	369.3	5.0	560.7	7.8	550.5	7.4	602.0	8.3	517.9	7.1

1/ Includes volume of palm.
2/ Includes Bureau of Land Management.
3/ Less than 0.05 cord per acre.

Table 21d. --Average net volume per acre of growing stock and cull timber 1/ on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1959

Forest type, species group, and class of material	All ownerships		National forest		Indian		Other Federal 2/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Growing stock:																
Softwood	105.7	1.5	303.8	4.5	-	-	122.2	1.8	341.8	4.7	252.8	3.2	72.0	1.0	129.6	1.8
Hardwood	1.0	(3/)	--	-	-	-	-	--	--	--	17.2	0.2	1.4	(3/)	-	--
Total	106.7	1.5	303.8	4.5	-	--	122.2	1.8	341.8	4.7	270.0	3.4	73.4	1.0	129.6	1.8
Cull timber:																
Softwood	3.2	(3/)	13.7	0.2	-		--	--	-	--	--	--	2.5	(3/)	4.3	0.1
Hardwood	11.4	0.2	-	--	--	--	--	--	3.0	(3/)	28.7	0.4	5.8	0.1	20.9	0.3
Total	14.6	0.2	13.7	0.2	--	--	--	-	3.0	(3/)	28.7	0.4	8.3	0.1	25.2	0.4
Oak-pine type:																
Growing stock:																
Softwood	215.1	2.8	122.9	1.5	-	-	-	-	257.2	3.2	--	--	296.4	4.0	128.6	1.6
Hardwood	20.3	0.3	--	--	-	-	--	-	-	-	-	-	24.5	0.4	21.8	0.3
Total	235.4	3.1	122.9	1.5	-	--	-	-	257.2	3.2	--	-	320.9	4.4	150.4	1.9
Cull timber:																
Softwood	3.9	(3/)	--	--	-	-	-	--	-	-	--	-	8.2	0.1	--	--
Hardwood	91.6	1.2	--	--	--	-	-	--	96.4	1.6	--	--	122.6	1.6	70.4	1.0
Total	95.5	1.2	--	--	--	--	-	--	96.4	1.6	-	--	130.8	1.7	70.4	1.0
Hardwood types:																
Growing stock:																
Softwood	213.7	2.7	71.7	0.9	-	-	21.2	0.3	275.5	3.5	848.5	10.1	207.2	2.6	182.6	2.3
Hardwood	210.2	2.8	75.1	1.2			53.1	0.7	156.6	2.0	206.0	2.9	186.2	2.5	245.7	3.3
Total	423.9	5.5	146.8	2.1	-	-	74.3	1.0	432.1	5.5	1,054.5	13.0	393.4	5.1	428.3	5.6
Cull timber:																
Softwood	13.3	0.2	--	--	--	-	10.6	0.1	7.5	0.1	91.6	1.1	11.5	0.1	10.8	0.1
Hardwood	379.5	5.1	232.1	3.3	--	--	69.0	0.8	173.6	2.4	119.4	1.6	456.9	6.2	341.1	4.6
Total	392.8	5.3	232.1	3.3	--	--	79.6	0.9	181.1	2.5	211.0	2.7	468.4	6.3	351.9	4.7
All types:																
Growing stock:																
Softwood	152.8	2.0	180.5	2.6	--	--	98.2	1.5	309.5	4.1	632.4	7.6	126.5	1.6	154.3	2.0
Hardwood	88.2	1.2	33.4	0.5	--	-	12.6	0.2	66.2	0.9	137.5	1.9	70.3	0.9	115.2	1.6
Total	241.0	3.2	213.9	3.1	--	-	110.8	1.7	375.7	5.0	769.9	9.5	196.8	2.5	269.5	3.6
Cull timber																
Softwood	7.4	0.1	6.1	0.1	-	--	2.5	(3/)	3.2	(3/)	58.3	0.7	6.0	0.1	7.2	0.1
Hardwood	165.9	2.2	103.2	1.5	--	-	16.4	0.2	79.8	1.1	86.5	1.2	175.3	2.4	171.5	2.3
Total	173.3	2.3	109.3	1.6	--	-	18.9	0.2	83.0	1.1	144.8	1.9	181.3	2.5	178.7	2.4
All timber	414.3	5.5	323.2	4.7	--	-	129.7	1.9	458.7	6.1	914.7	11.4	378.1	5.0	448.2	6.0

1/ Includes volume of palm.
2/ Includes Bureau of Land Management.
3/ Less than 0.05 cord per acre.

Table 21e. --Average net volume per acre of growing stock and cull timber 1/ on commercial forest land, by ownership, major forest type, and species group, South Florida, 1959

Forest type, species group, and class of material	All ownerships		National forest		Indian		Other Federal 2/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Growing stock:																
Softwood	89.7	1.3	--	--	--	--	(4/)	(4/)	38.2	0.5	--	--	78.5	1.1	101.4	1.4
Hardwood	0.3	(3/)	--	--	--	--	--	--	--	--	--	--	0.7	(3/)	--	--
Total	90.0	1.3	--	--	--	--	(4/)	(4/)	38.2	0.5	--	--	79.2	1.1	101.4	1.4
Cull timber:																
Softwood	1.1	(3/)	--	--	--	--	--	--	--	--	--	--	1.2	(3/)	1.2	(3/)
Hardwood	18.4	0.3	--	--	--	--	--	--	--	--	--	--	8.3	0.1	27.4	0.4
Total	19.5	0.3	--	--	--	--	--	--	--	--	--	--	9.5	0.1	28.6	0.4
Oak-pine type:																
Growing stock:																
Softwood	255.8	3.3	--	--	--	--	--	--	--	--	--	--	562.0	6.7	149.6	2.1
Hardwood	2.4	(3/)	--	--	--	--	--	--	--	--	--	--	9.4	0.2	--	--
Total	258.2	3.3	--	--	--	--	--	--	--	--	--	--	571.4	6.9	149.6	2.1
Cull timber:																
Softwood	14.5	0.2	--	--	--	--	--	--	--	--	--	--	56.2	0.7	--	--
Hardwood	270.3	3.7	--	--	--	--	--	--	--	--	--	--	243.5	3.2	279.6	3.9
Total	284.8	3.9	--	--	--	--	--	--	--	--	--	--	299.7	3.9	279.6	3.9
Hardwood types:																
Growing stock:																
Softwood	363.8	4.5	--	--	121.7	1.7	--	--	28.9	0.3	--	--	277.0	3.4	404.6	5.0
Hardwood	26.7	0.4	--	--	--	--	--	--	--	--	--	--	17.5	0.2	30.8	0.4
Total	390.5	4.9	--	--	121.7	1.7	--	--	28.9	0.3	--	--	294.5	3.6	435.4	5.4
Cull timber:																
Softwood	62.5	0.8	--	--	164.0	2.1	--	--	--	--	--	--	13.7	0.2	73.1	0.9
Hardwood	307.5	4.2	--	--	79.4	1.0	(4/)	(4/)	115.6	1.4	--	--	364.5	4.9	305.6	4.2
Total	370.0	5.0	--	--	243.4	3.1	(4/)	(4/)	115.6	1.4	--	--	378.2	5.1	378.7	5.1
All types:																
Growing stock:																
Softwood	192.2	2.5	--	--	121.7	1.7	(4/)	(4/)	36.9	0.5	--	--	134.0	1.8	233.0	3.0
Hardwood	9.8	0.1	--	--	--	--	--	--	--	--	--	--	4.8	0.1	13.2	0.2
Total	202.0	2.6	--	--	121.7	1.7	(4/)	(4/)	36.9	0.5	--	--	138.8	1.9	246.2	3.2
Cull timber:																
Softwood	23.6	0.3	--	--	164.0	2.1	--	--	--	--	--	--	5.2	0.1	32.1	0.4
Hardwood	128.2	1.8	--	--	79.4	1.0	(4/)	(4/)	115.6	1.4	--	--	96.0	1.3	153.5	2.1
Total	151.8	2.1	--	--	243.4	3.1	(4/)	(4/)	115.6	1.4	--	--	101.2	1.4	185.6	2.5
All timber	353.8	4.7	--	--	365.1	4.8	(4/)	(4/)	152.5	1.9	--	--	240.0	3.3	431.8	5.7

1/ Includes volume of palm.
2/ Includes Bureau of Land Management.
3/ Less than 0.05 cord per acre.
4/ Excluded because of excessive sampling error.

Table 22.--Average net volume per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality, Florida, 1959

PINE TYPES

Site quality and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site										
Well stocked	793.0	11.1	1,320.3	18.1	506.6	7.7	45.4	0.6	--	--
Medium stocked	381.0	5.3	886.5	12.0	279.3	4.2	51.4	0.7	150.1	1.9
Poorly stocked	94.2	1.3	549.9	7.2	191.6	2.9	34.5	0.5	32.0	0.4
Total	[illegible]	6.1	1,131.3	15.4	366.6	5.6	42.8	0.6	34.9	0.5
Fair site										
Well stocked	470.4	6.7	990.6	[illegible]	465.9	7.0	53.1	0.7	-	--
Medium stocked	264.1	3.7	634.0	8.5	261.1	3.9	45.0	0.6	196.0	2.6
Poorly stocked	51.4	0.7	538.4	7.2	143.7	2.1	27.2	0.4	22.9	0.3
Total	168.2	2.4	785.4	10.6	298.2	4.5	37.6	0.5	25.6	0.3
Poor site										
Well stocked	306.5	4.5	812.0	11.4	348.0	5.4	41.4	0.5	--	-
Medium stocked	242.0	3.4	606.1	7.8	263.6	4.0	[illegible]	0.8	266.2	3.4
Poorly stocked	23.0	0.3	--	--	146.4	[illegible]	11.5	0.1	10.2	0.1
Total	80.0	1.2	722.3	9.8	247.7	3.8	30.0	0.4	11.3	0.2
All sites:										
Well stocked	657.0	9.3	1,243.6	17.0	471.9	7.1	47.1	0.6	-	--
Medium stocked	331.0	4.6	802.8	10.8	271.8	4.1	50.2	0.7	187.3	2.4
Poorly stocked	54.5	0.8	546.1	7.2	162.1	2.5	27.7	0.4	19.8	0.3
Total	264.5	3.7	1,039.8	14.2	325.4	4.9	38.9	0.5	21.9	0.3

OAK-PINE TYPES

Site quality and stocking	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site:										
Well stocked	1,004.5	13.4	1,432.3	18.9	440.9	6.4	106.4	1.4	--	—
Medium stocked	469.6	6.4	849.4	11.5	276.0	4.0	73.2	[illegible]	218.3	[illegible]
Poorly stocked	237.7	3.2	631.4	8.2	234.8	3.5	93.1	1.2	111.5	1.4
Total	669.2	9.0	1,185.4	15.7	351.0	5.1	88.5	1.2	122.5	[illegible]
Fair site										
Well stocked	681.2	9.2	1,055.6	14.0	273.5	4.2	110.3	1.2	--	-
Medium stocked	317.0	4.3	789.9	10.4	116.5	1.8	129.0	1.7	--	--
Poorly stocked	127.6	1.7	341.8	4.5	221.0	3.1	62.9	0.8	88.3	1.1
Total	270.5	3.7	882.5	11.7	204.7	[illegible]	89.0	[illegible]	[illegible]	1.1
Poor site:										
Well stocked	359.9	5.1	--	--	359.9	5.1	--	--	--	--
Medium stocked	--	-	--	--	-	--	--	--	--	
Poorly stocked	122.7	1.7	--	-	194.7	[illegible]	[illegible]	0.6	122.8	[illegible]
Total	131.9	1.8	--	-	224.4	3.2	39.0	0.5	[illegible]	1.7
All sites										
Well stocked	942.0	12.6	1,375.4	18.2	407.0	6.0	107.1	1.4	—	-
Medium stocked	411.9	5.6	834.0	11.2	222.1	3.2	95.8	1.3	218.3	[illegible]
Poorly stocked	162.6	2.2	587.2	7.6	218.4	3.1	68.7	0.9	105.7	1.4
Total	488.9	6.6	1,129.3	16.0	283.5	4.1	84.4	1.1	[illegible]	1.4

Table 22.--Average net volume per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality, Florida, 1959 (continued)

HARDWOOD TYPES

Site quality and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site:										
Well stocked	1,807.7	23.3	2,113.6	26.8	872.1	12.6	40.3	0.5	--	--
Medium stocked	1,396.7	17.9	1,642.7	20.9	573.2	8.1	77.9	1.0	631.1	7.0
Poorly stocked	[illegible]	[illegible]	970.2	12.1	244.2	3.4	129.5	1.6	161.1	2.0
Total	1,479.1	19.0	1,792.7	22.8	723.0	10.4	85.3	1.0	175.1	2.1
Fair site:										
Well stocked	879.3	11.6	1,462.2	18.8	527.8	7.5	112.4	1.6	--	--
Medium stocked	656.1	8.7	1,113.3	14.5	478.5	6.8	131.6	1.7	371.2	5.0
Poorly stocked	132.8	1.7	770.4	9.9	278.5	3.9	67.4	0.9	35.2	0.5
Total	445.0	5.9	1,211.9	15.7	449.0	6.4	92.0	1.2	36.7	0.5
Poor site:										
Well stocked	281.4	3.8	1,199.2	14.4	366.0	5.1	7.1	0.1	--	--
Medium stocked	69.6	1.0	--	--	348.8	4.9	20.1	0.3	--	--
Poorly stocked	11.9	0.2	353.3	4.0	157.7	2.3	7.1	0.1	6.1	0.1
Total	25.3	0.3	782.7	9.3	260.3	3.7	10.0	0.1	6.1	0.1
All sites:										
Well stocked	1,197.0	15.6	1,799.7	23.0	589.3	8.4	91.8	1.3	--	--
Medium stocked	818.6	10.7	1,336.0	17.2	488.2	6.9	107.0	1.4	419.8	5.4
Poorly stocked	116.8	1.5	855.4	10.8	258.5	3.6	54.3	0.7	22.4	0.3
Total	526.6	6.9	1,485.5	19.0	475.9	6.8	73.9	1.0	23.4	0.3

ALL TYPES

Site quality and stocking	All stand sizes Cubic feet	All stand sizes Cords	Sawtimber Cubic feet	Sawtimber Cords	Poletimber Cubic feet	Poletimber Cords	Seedling and sapling Cubic feet	Seedling and sapling Cords	Nonstocked and other Cubic feet	Nonstocked and other Cords
Good site:										
Well stocked	1,083.1	14.6	1,626.4	21.4	564.2	8.4	50.2	0.7	--	--
Medium stocked	620.5	8.3	1,210.4	15.8	313.3	4.6	54.7	0.7	189.0	2.3
Poorly stocked	176.1	2.3	782.9	9.9	198.6	3.0	42.6	0.6	42.1	0.6
Total	675.9	9.1	1,407.1	18.4	413.7	6.2	48.6	0.7	46.2	0.6
Fair site:										
Well stocked	727.5	9.8	1,336.4	17.4	499.5	7.3	80.6	1.1	--	--
Medium stocked	506.5	6.8	993.9	13.0	390.4	5.6	93.3	1.2	231.3	3.1
Poorly stocked	94.2	1.3	711.3	9.2	214.3	3.1	49.4	0.7	29.7	0.4
Total	322.9	4.3	1,103.1	14.4	379.9	5.5	66.7	0.9	31.8	0.4
Poor site:										
Well stocked	302.2	4.4	844.2	11.6	352.2	5.3	34.5	0.4	--	--
Medium stocked	197.3	2.8	606.1	7.8	272.4	4.1	41.1	0.5	266.2	3.4
Poorly stocked	19.8	0.3	353.3	4.0	153.1	2.3	11.1	0.1	9.4	0.1
Total	57.3	0.8	727.8	9.8	249.2	3.7	22.3	0.3	9.9	0.1
All sites:										
Well stocked	886.5	12.0	1,519.0	20.0	511.7	7.6	60.7	0.8	--	--
Medium stocked	535.9	7.2	1,100.8	14.4	350.0	5.1	70.4	0.9	217.9	2.8
Poorly stocked	84.1	11.2	747.1	9.5	197.4	2.9	39.9	0.5	22.2	0.3
Total	382.1	5.1	1,279.9	16.8	376.4	5.5	52.8	0.7	24.0	0.3

Table 23.--Net annual growth, mortality, and cut of sawtimber and growing stock on commercial forest land, by ownership and species group, Florida, 1958

Growth, mortality, and cut, by species group	All ownerships	National forest	Indian	Bureau of Land Management	Other Federal	State, county, and municipal	Forest industry	Farm	Misc. private
SAWTIMBER (In million board feet)									
Net annual growth:									
Pine	929.2	78.1	--	--	23.2	32.5	307.6	166.3	321.5
Cypress	165.4	3.5	2.5	--	1.1	2.8	45.0	58.1	52.4
Hardwood	223.1	2.7	--	--	1.3	1.3	67.4	60.9	89.5
Total	1,317.7	84.3	2.5	--	25.6	36.6	420.0	285.3	463.4
Annual mortality:									
Pine	395.0	32.5	--	--	10.3	14.0	131.4	70.4	136.4
Cypress	81.6	1.7	1.2	--	0.6	1.4	22.2	28.6	25.9
Hardwood	247.5	3.1	--	--	1.3	1.4	74.6	67.8	99.3
Total	724.1	37.3	1.2	--	12.2	16.8	228.2	166.8	261.6
Annual cut:									
Pine	611.5	34.8	--	--	8.6	7.9	211.6	178.6	170.0
Cypress	30.5	19.6	--	--	-	--	1.1	8.7	1.1
Hardwood	91.6	0.6	--	--	-	--	26.2	41.1	23.7
Total	733.6	55.0	--	-	8.6	7.9	238.9	228.4	194.8
GROWING STOCK (In million cubic feet)									
Net annual growth:									
Pine	211.8	18.0	-	--	5.3	8.9	69.3	42.1	68.2
Cypress	35.4	1.0	0.1	--	0.3	0.5	9.9	9.9	13.7
Hardwood	64.6	1.5	--	--	0.7	0.6	18.2	19.0	24.6
Total	311.8	20.5	0.1	--	6.3	10.0	97.4	71.0	106.5
Annual mortality:									
Pine	90.1	7.7	--	--	2.1	3.7	29.6	17.9	29.1
Cypress	17.4	0.4	--	--	0.2	0.2	4.9	4.9	6.8
Hardwood	71.6	1.6	--	--	0.7	0.7	20.1	21.1	27.4
Total	179.1	9.7	--	--	3.0	4.6	54.6	43.9	63.3
Annual cut:									
Pine	159.5	11.0	--	--	2.2	2.6	51.2	44.3	48.2
Cypress	7.1	4.1	--	--	-	--	0.2	2.5	0.3
Hardwood	22.7	0.2	--		--	0.1	5.6	10.9	5.9
Total	189.3	15.3	--	--	2.2	2.7	57.0	57.7	54.4
GROWING STOCK (In thousand cords)									
Net annual growth:									
Pine	3,041	252	--	--	79	128	1,001	611	970
Cypress	454	12	1	--	4	7	122	128	180
Hardwood	889	22	--	--	11	9	240	268	339
Total	4,384	286	1	--	94	144	1,363	1,007	1,489
Annual mortality:									
Pine	1,293	109	--	--	34	53	425	260	412
Cypress	223	6	--	--	2	3	60	63	89
Hardwood	987	24	-	--	12	10	267	298	376
Total	2,503	139	--	--	48	66	752	621	877
Annual cut:									
Pine	2,198	152	--	--	31	35	705	611	664
Cypress	78	45	--	-		--	2	28	3
Hardwood	277	2	--	-		1	69	133	72
Total	2,553	199	--	--	31	36	776	772	739

Table 24. --Annual mortality of sawtimber and growing stock on commercial forest land, by species group and cause of death, Florida, 1958

Species group	Cause of death					
	All causes	Fire	Insects	Diseases	Other	Unknown
SAWTIMBER (In million board feet)						
Pine	395.0	--	102.3	19.7	130.4	142.6
Cypress	81.6	49.0	--	--	15.7	16.9
Hardwood	247.5	--	--	--	99.2	148.3
Total	724.1	49.0	102.3	19.7	245.3	307.8
GROWING STOCK (In million cubic feet)						
Pine	90.1	--	21.9	4.9	28.4	34.9
Cypress	17.4	10.6		--	2.6	4.2
Hardwood	71.6	2.9	3.6	2.1	19.3	43.7
Total	179.1	13.5	25.5	7.0	50.3	82.8
GROWING STOCK (In thousand cords)						
Pine	1,293		314	70	407	502
Cypress	223	136	--	--	33	54
Hardwood	987	39	49	30	267	602
Total	2,503	175	363	100	707	1,158

Table 25a. --Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 1958

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal 1/	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	[illegible]	95	--	91	75	95	42	76
Hardwood	(2/)	(2/)	--	--	--	1	(2/)	(2/)
Total	72	95	--	91	75	96	42	76
Oak-pine type:								
Softwood	95	116	--	19	28	123	122	66
Hardwood	9	--	--	3	--	9	11	9
Total	104	116		22	28	132	133	75
Hardwood types:								
Softwood	29	23	137	6	28	43	32	21
Hardwood	27	10	--	3	9	40	26	25
Total	56	33	137	9	37	83	58	46
All types:								
Softwood	56	79	137	41	61	78	42	50
Hardwood	11	3	-	2	2	15	11	12
Total	67	82	137	43	63	93	53	62

1/ Includes Bureau of Land Management.
2/ Less than 0.5 board foot per acre.

Table 25b. --Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1958

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal 1/	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types.								
Softwood	97	97	--	--	45	116	80	90
Hardwood	(2/)	--	--	--	--	1	(2/)	(2/)
Total	97	97	--	--	45	117	80	90
Oak-pine type:								
Softwood	116	78	--	--	--	130	130	88
Hardwood	14	--	--	--	--	9	18	19
Total	130	78	--	--	--	139	148	107
Hardwood types:								
Softwood	29	35	--	--	3	45	22	22
Hardwood	33	13	--	--	13	37	35	30
Total	62	48	--	--	16	82	57	52
All types:								
Softwood	71	86	--	--	37	92	57	59
Hardwood	14	2	--	--	2	15	19	15
Total	85	88	--	--	39	107	76	74

1/ Includes Bureau of Land Management.
2/ Less than 0.5 board foot per acre.

Table 25c. --Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1958

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal 1/	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	100	85	--	114	168	70	110	139
Hardwood	(2/)	(2/)	--	--	--	(2/)	2	(2/)
Total	100	85	-	114	168	70	112	139
Oak-pine type:								
Softwood	84	163	--	19	30	111	114	69
Hardwood	5	--	--	3	--	9	8	2
Total	89	163	--	22	30	120	122	71
Hardwood types:								
Softwood	19	19	--	7	29	33	22	11
Hardwood	32	11	--	3	8	42	46	30
Total	51	30	--	10	37	75	68	41
All types:								
Softwood	65	70	--	44	118	60	65	68
Hardwood	14	3	--	2	2	15	25	16
Total	79	73	--	46	120	75	90	84

1/ Includes Bureau of Land Management.
2/ Less than 0.5 board foot per acre.

Table 25d. --Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1958

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal 1/	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	28	202	--	41	48	40	17	36
Hardwood	(2/)	--	--	--	--	(2/)	(2/)	--
Total	28	202	--	41	48	40	17	36
Oak-pine type:								
Softwood	75	8	--	--	22	--	128	30
Hardwood	(2/)	--	--	--	--	-	1	(2/)
Total	75	8		-	22	--	129	30
Hardwood types:								
Softwood	34	13	--	1	48	111	38	25
Hardwood	18	2	-	3	9	49	11	24
Total	52	15	--	4	57	160	49	49
All types:								
Softwood	31	96	--	31	47	86	27	31
Hardwood	8	1	--	1	3	31	4	11
Total	39	97	--	32	50	117	31	42

1/ Includes Bureau of Land Management.
2/ Less than 0.5 board foot per acre.

Table 25e. --Average annual net growth per acre of sawtimber on commercial forest land, by ownership, major forest type, and species group, South Florida, 1958

(In board feet)

Type and species group	All ownerships	National forest	Indian	Other Federal 1/	State, county, and municipal	Forest industry	Farm	Misc. private
Pine types:								
Softwood	29	--	-	52	8	--	15	40
Hardwood	--	--	--	--	--	--	--	-
Total	29	--	--	52	8	--	15	40
Oak-pine type:								
Softwood	25	--	--	--	--	--	69	10
Hardwood	-	--	--	--	--	--	-	--
Total	25	--	--	--	--	-	69	10
Hardwood types:								
Softwood	42	--	137	--	--	--	79	31
Hardwood	3	--	--	--	--	--	1	4
Total	45	--	137	--	--	--	80	35
All types:								
Softwood	33	--	137	42	6	--	31	36
Hardwood	1	--	--	--	--	--	(2/)	2
Total	34	-	137	42	6	--	31	38

1/ Includes Bureau of Land Management.
2/ Less than 0.5 board foot per acre.

Table 26a. --Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group, for the entire State of Florida, 1958

Type and species group	All ownerships		National forest		Indian		Other Federal 1/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Softwood	17.1	0.3	22.9	0.3	--	--	18.4	0.3	20.0	0.3	22.6	0.3	11.4	0.1	16.0	0.2
Hardwood	0.2	(2/)	(2/)	(2/)	--	--	0.1	(2/)	(2/)	(2/)	0.2	(2/)	0.1	(2/)	0.2	(2/)
Total	17.3	0.3	22.9	0.3	--	-	18.5	0.3	20.0	0.3	22.8	0.3	11.5	0.1	16.2	0.2
Oak-pine type:																
Softwood	19.6	0.3	8.1	0.1	--	--	7.9	0.1	12.1	0.1	27.5	0.4	21.4	0.3	16.7	0.2
Hardwood	3.5	(2/)	1.4	(2/)	--	--	3.7	(2/)	1.6	(2/)	3.5	(2/)	3.8	(2/)	3.7	(2/)
Total	23.1	0.3	9.5	0.1	--	--	11.6	0.1	13.7	0.1	31.0	0.4	25.2	0.3	20.4	0.2
Hardwood types:																
Softwood	5.8	0.1	6.4	0.1	4.7	0.1	2.2	(2/)	5.8	0.1	7.7	0.1	5.9	0.1	5.2	0.1
Hardwood	7.4	0.1	5.5	0.1	--	--	1.4	(2/)	3.7	(2/)	10.5	0.1	8.0	0.1	6.5	0.1
Total	13.2	0.2	11.9	0.2	4.7	0.1	3.6	(2/)	9.5	0.1	18.2	0.2	13.9	0.2	11.7	0.2
All types:																
Softwood	12.6	0.2	18.4	0.3	4.7	0.1	9.3	0.1	16.0	0.2	17.5	0.3	9.7	0.1	10.9	0.1
Hardwood	3.3	(2/)	1.4	(2/)	--	--	1.2	(2/)	1.0	(2/)	4.0	(2/)	3.6	(2/)	3.3	(2/)
Total	15.9	0.2	19.8	0.3	4.7	0.1	10.5	0.1	17.0	0.2	21.5	0.3	13.3	0.1	14.2	0.1

1/ Includes Bureau of Land Management.
2/ Less than 0.05 cord per acre.

Table 26b. --Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group, Northeast Florida, 1958

Type and species group	All ownerships		National forest		Indian		Other Federal 1/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Softwood	23.4	0.3	22.3	0.3	--	--	--	-	14.8	0.2	26.3	0.3	20.8	0.3	22.4	0.3
Hardwood	0.2	(2/)	--	--	--	--	--	--	--		0.2	(2/)	0.2	(2/)	0.2	(2/)
Total	23.6	0.3	22.3	0.3	-	--	--	--	14.8	0.2	26.5	0.3	21.0	0.3	22.6	0.3
Oak-pine type:																
Softwood	25.4	0.3	16.9	0.2	--	--	--	-	--	--	29.4	0.4	24.0	0.3	23.1	0.3
Hardwood	4.2	(2/)	--	--	--	--	--		--		3.4	(2/)	3.3	(2/)	6.1	0.1
Total	29.6	0.3	16.9	0.2	--	--	--	-	-		32.8	0.4	27.3	0.3	29.2	0.4
Hardwood types:																
Softwood	6.5	0.1	10.0	0.1	--	-	-	--	0.8	(2/)	9.0	0.1	5.9	0.1	5.0	0.1
Hardwood	9.3	0.1	7.1	0.1	--	--	-	-	2.6	(2/)	10.5	0.1	10.0	0.1	8.4	0.1
Total	15.8	0.2	17.1	0.2	--	--	--	-	3.4	(2/)	19.5	0.2	15.9	0.2	13.4	0.2
All types:																
Softwood	16.7	0.2	20.1	0.3	--	--	--	--	12.0	0.1	20.3	0.3	13.9	0.2	14.6	0.2
Hardwood	4.1	(2/)	1.2	(2/)	--	--	--	-	0.5	(2/)	4.1	(2/)	5.3	(2/)	4.2	(2/)
Total	20.8	0.2	21.3	0.3	--	--	-	--	12.5	0.1	24.4	0.3	19.2	0.2	18.8	0.2

1/ Includes Bureau of Land Management.
2/ Less than 0.05 cord per acre.

Table 26c. --Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group, Northwest Florida, 1958

Type and species group	All ownerships		National forest		Indian		Other Federal 1/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types																
Softwood	23.0	0.3	24.0	0.3	--	--	23.4	0.3	39.6	0.6	18.3	0.3	26.7	0.4	24.9	0.3
Hardwood	0.3	(2/)	0.1	(2/)	--	--	0.2	(2/)	0.2	(2/)	0.3	(2/)	0.6	(2/)	0.4	(2/)
Total	[illegible]	[illegible]	24.1	0.3	--	--	23.6	0.3	39.8	0.6	18.6	0.3	27.3	0.4	25.3	0.3
Oak-pine type:																
Softwood	15.9	0.2	7.2	0.1	--	--	7.9	0.1	13.9	0.2	24.2	0.3	18.9	0.3	14.3	0.2
Hardwood	4.0	(2/)	2.3	(2/)	--	--	3.7	(2/)	2.2	(2/)	3.8	(2/)	6.6	0.1	2.4	(2/)
Total	[illegible]	[illegible]	[illegible]	0.1	--	--	11.6	0.1	16.1	0.2	28.0	0.3	25.5	0.4	16.7	0.2
Hardwood types:																
Softwood	3.8	0.1	5.6	0.1	-	--	2.4	(2/)	8.0	0.1	4.7	0.1	4.5	0.1	2.5	(2/)
Hardwood	9.3	0.1	5.2	0.1	--	--	1.5	(2/)	5.6	0.1	10.9	0.1	14.0	0.2	8.6	0.1
Total	13.1	0.2	10.8	0.2	-		3.9	(2/)	13.6	0.2	15.6	0.2	18.5	0.3	11.1	0.1
All types:																
Softwood	14.3	0.2	18.2	0.3	-	--	10.1	0.1	28.7	0.4	14.1	0.2	14.7	0.2	12.6	0.2
Hardwood	4.4	(2/)	1.6	(2/)	--	--	1.4	(2/)	1.8	(2/)	4.0	(2/)	8.0	0.1	4.8	(2/)
Total	[illegible]	[illegible]	[illegible]	0.3	--	--	11.5	0.1	30.5	0.4	18.1	0.2	22.7	0.3	17.4	0.2

1/ Includes Bureau of Land Management.
2/ Less than 0.05 cord per acre.

Table 26d. --Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group, Central Florida, 1958

Type and species group	All ownerships		National forest		Indian		Other Federal 1/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types:																
Softwood	6.9	0.1	17.2	0.3	--	--	6.9	0.1	17.8	0.3	6.3	0.1	5.6	0.1	7.9	0.1
Hardwood	(2/)	(2/)	-	-	--	-	--	-	--	--	0.2	(2/)	(2/)	(2/)	--	--
Total	6.9	0.1	17.2	0.3	--	--	6.9	0.1	17.8	0.3	6.5	0.1	5.6	0.1	7.9	0.1
Oak-pine type:																
Softwood	[illegible]	0.1	1.0	(2/)	--	--	--	--	7.6	0.1	--	--	17.5	0.3	5.2	0.1
Hardwood	[illegible]	(2/)	--	--	-	--	--	--	-	--	--	--	1.0	(2/)	0.7	(2/)
Total	11.7	0.1	1.0	(2/)	--	--	--	--	7.6	0.1	--	--	18.5	0.3	5.9	0.1
Hardwood types:																
Softwood	6.1	0.1	2.1	(2/)	--	--	0.4	(2/)	6.9	0.1	19.5	0.2	6.2	0.1	5.2	0.1
Hardwood	4.7	(2/)	3.5	(2/)	-	--	0.8	(2/)	3.3	(2/)	5.6	0.1	4.2	(2/)	5.3	0.1
Total	[illegible]	0.1	5.6	(2/)			1.2	(2/)	10.2	0.1	25.1	0.3	10.4	0.1	10.5	0.2
All types:																
Softwood	6.6	0.1	8.7	0.1	-	--	5.2	0.1	12.6	0.2	14.7	0.2	6.1	0.1	6.5	0.1
Hardwood	2.0	(2/)	1.6	(2/)	--	--	0.2	(2/)	1.4	(2/)	3.7	(2/)	1.6	(2/)	2.5	(2/)
Total	[illegible]	[illegible]	[illegible]	0.1	--	--	5.4	0.1	14.0	0.2	18.4	0.2	7.7	0.1	9.0	0.1

1/ Includes Bureau of Land Management.
2/ Less than 0.05 cord per acre.

Table 26e. --Average annual net growth per acre of growing stock on commercial forest land, by ownership, major forest type, and species group, South Florida, 1958

Type and species group	All ownerships		National forest		Indian		Other Federal 1/		State, county, and municipal		Forest industry		Farm		Misc. private	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Pine types																
Softwood	5.4	0.1	--	--	--	--	18.4	0.3	1.5	(2/)	--	--	6.1	0.1	5.4	0.1
Hardwood	(2/)	(2/)	--	--	--	--	--	--	--	--	--	--	(2/)	(2/)	--	--
Total	5.4	0.1	--	--	--	--	18.4	0.3	1.5	(2/)	--	--	6.1	0.1	5.4	0.1
Oak-pine type																
Softwood	14.4	0.2	--	--	--	--	--	--	--	--	--	--	26.0	0.3	10.4	0.1
Hardwood	0.1	(2/)	--	--	--	--	--	--	--	--	--	--	0.6	(2/)	--	--
Total	14.5	0.2	--	--	--	--	--	--	--	--	--	--	26.6	0.3	10.4	0.1
Hardwood types																
Softwood	9.6	0.1	--	--	4.7	0.1	--	--	4.2	0.1	--	--	9.1	0.1	10.0	0.1
Hardwood	0.9	(2/)	--	--	--	--	--	--	--	--	--	--	0.5	(2/)	1.0	(2/)
Total	10.5	0.1	--	--	4.7	0.1	--	--	4.2	0.1	--	--	9.6	0.1	11.0	0.1
All types																
Softwood	7.1	0.1	--	--	4.7	0.1	18.4	0.3	1.9	(2/)	--	--	7.2	0.1	7.5	0.1
Hardwood	0.3	(2/)	--	--	--	--	--	--	--	--	--	--	0.1	(2/)	0.4	(2/)
Total	7.4	0.1	--	--	4.7	0.1	18.4	0.3	1.9	(2/)	--	--	7.3	0.1	7.9	0.1

1/ Includes Bureau of Land Management.

2/ Less than 0.05 cord per acre.

Table 27. --Average annual net growth per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality, Florida, 1958

PINE TYPES

Site and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site:										
Well stocked	43.8	0.6	48.9	0.7	58.0	0.9	4.3	0.1	--	--
Medium stocked	23.5	0.4	32.8	0.4	32.7	0.5	4.3	0.1	5.1	0.1
Poorly stocked	5.8	0.1	16.3	0.2	19.8	0.3	2.0	(1/)	1.9	(1/)
Total	24.9	0.4	41.[illegible]	0.6	41.8	0.6	3.3	0.1	2.0	(1/)
Fair site:										
Well stocked	31.3	0.4	37.3	0.5	42.9	0.6	8.4	0.1	--	--
Medium stocked	14.6	0.2	19.4	0.2	22.7	0.4	2.8	0.1	5.5	0.1
Poorly stocked	2.9	0.1	14.8	0.2	13.8	0.2	1.4	(1/)	0.8	(1/)
Total	10.3	0.1	27.0	0.4	27.2	0.4	3.3	0.1	0.9	(1/)
Poor site:										
Well stocked	18.7	0.2	21.0	0.3	25.5	0.4	7.9	0.1	--	--
Medium stocked	13.3	0.2	12.4	0.2	21.8	0.4	4.2	0.1	10.9	0.1
Poorly stocked	1.6	(1/)	--	--	12.1	0.2	1.4	(1/)	0.4	(1/)
Total	4.[illegible]	0.1	17.2	0.2	14.5	0.3	3.8	0.1	0.4	(1/)
All sites:										
Well stocked	[illegible]	0.6	[illegible]	[illegible]	48.9	0.7	6.3	0.1	-	--
Medium stocked	19.7	0.3	28.0	0.4	28.3	0.4	3.8	0.1	6.0	0.1
Poorly stocked	3.3	0.1	15.8	0.2	15.6	0.2	1.7	(1/)	0.9	(1/)
Total	17.3	0.3	37.4	0.5	33.5	0.5	3.5	0.1	0.9	(1/)

OAK-PINE TYPES

Site and stocking	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site:										
Well stocked	46.4	0.6	56.8	0.8	40.4	0.6	9.1	0.1	--	--
Medium stocked	21.9	0.3	34.5	0.4	19.8	0.3	5.3	0.1	5.0	0.1
Poorly stocked	[illegible]	0.1	19.3	0.2	21.7	0.3	4.2	0.1	3.9	0.1
Total	[illegible]	0.4	46.6	0.6	30.4	0.4	6.0	0.1	4.0	0.1
Fair site:										
Well stocked	19.5	0.4	33.5	0.5	34.9	0.6	3.3	0.1	--	--
Medium stocked	12.0	0.2	13.4	0.2	19.5	0.3	7.0	0.1	--	--
Poorly stocked	5.6	0.1	4.8	0.1	12.6	0.2	1.6	(1/)	3.1	0.1
Total	[illegible]	0.2	22.4	0.3	17.9	0.3	3.5	0.1	3.1	0.1
Poor site:										
Well stocked	7.1	0.1	--	--	7.1	0.1	--	--		-
Medium stocked	-	-	--	--	--	--		-		-
Poorly stocked	5.5	0.1	--	--	7.6	0.1	5.5	0.1	4.1	0.1
Total	5.4	0.1	--	--	7.5	0.1	4.8	0.1	4.1	0.1
All sites:										
Well stocked	43.0	0.6	53.3	0.7	37.6	0.6	8.1	0.1	--	--
Medium stocked	18.2	0.2	29.0	0.4	19.7	0.3	5.9	0.1	5.0	0.1
Poorly stocked	7.2	0.1	17.1	0.2	13.6	0.2	3.0	0.1	3.7	0.1
Total	25.1	0.3	42.2	0.6	23.3	0.4	4.8	0.1	3.7	0.1

1/ Less than 0.05 cord per acre.

Table 27.--Average annual net growth per acre of growing stock on commercial forest land, by stand size, major forest type, stocking, and site quality, Florida, 1958 (continued)

HARDWOOD TYPES

Site quality and stocking	Stand size									
	All stand sizes		Sawtimber		Poletimber		Seedling and sapling		Nonstocked and other	
	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords	Cubic feet	Cords
Good site:										
Well stocked	47.2	0.6	50.0	0.7	42.9	0.6	3.7	(1/)	--	--
Medium stocked	31.3	0.4	34.2	0.4	25.1	0.4	1.2	(1/)	6.5	0.1
Poorly stocked	12.8	0.2	17.4	0.2	10.1	0.1	1.9	(1/)	4.3	0.1
Total	36.2	0.5	40.1	[illegible]	[illegible]	0.4	2.4	(1/)	4.4	0.1
Fair site:										
Well stocked	29.0	0.4	36.6	0.5	29.0	0.4	5.9	0.1	--	--
Medium stocked	20.2	0.3	27.2	0.4	21.3	0.3	5.1	0.1	8.8	0.1
Poorly stocked	3.8	0.1	16.6	0.2	11.2	0.2	2.5	(1/)	0.8	(1/)
Total	14.0	0.2	29.6	0.4	21.3	0.3	3.8	0.1	0.8	(1/)
Poor site:										
Well stocked	15.9	0.2	11.8	0.1	21.4	[illegible]	2.6	0.1	-	-
Medium stocked	4.2	(1/)	--	--	[illegible]	0.1	3.7	(1/)	--	-
Poorly stocked	0.6	(1/)	3.8	0.1	13.0	0.2	1.1	(1/)	0.2	(1/)
Total	1.4	(1/)	7.9	0.1	15.8	0.2	1.7	(1/)	0.2	(1/)
All sites:										
Well stocked	35.2	0.5	43.5	0.6	31.4	0.4	5.9	0.1	-	--
Medium stocked	22.3	0.3	30.1	0.4	21.5	0.3	4.7	0.1	3.4	0.1
Poorly stocked	3.0	0.1	16.7	0.2	11.4	0.2	1.9	(1/)	0.6	(1/)
Total	13.2	0.2	34.5	0.4	23.3	0.3	3.3	0.1	0.6	(1/)
ALL TYPES										
Good site:										
Well stocked	45.0	0.6	50.1	0.7	54.0	0.8	4.7	0.1	—	—
Medium stocked	25.1	0.4	33.6	0.4	30.9	0.5	4.3	0.1	5.1	0.1
Poorly stocked	7.0	0.1	17.1	0.2	19.2	0.3	2.1	(1/)	2.2	(1/)
Total	27.8	0.4	41.5	0.6	39.9	0.6	3.5	0.1	2.2	(1/)
Fair site:										
Well stocked	29.8	0.4	36.7	0.5	34.4	0.5	7.2	0.1	--	--
Medium stocked	17.9	0.2	24.9	0.3	21.8	0.3	4.3	0.1	6.1	0.1
Poorly stocked	3.4	0.1	15.9	0.2	12.5	0.2	1.9	(1/)	0.9	(1/)
Total	12.4	0.2	28.8	0.4	23.8	0.4	3.6	0.1	0.9	(1/)
Poor site:										
Well stocked	18.0	0.2	20.2	0.3	24.2	0.4	7.8	0.1	—	--
Medium stocked	10.9	0.2	12.4	0.2	20.3	0.3	3.8	0.1	10.9	0.1
Poorly stocked	1.2	(1/)	3.8	0.1	11.9	0.2	1.0	(1/)	0.4	(1/)
Total	3.4	0.1	16.4	0.2	18.0	0.2	3.0	0.1	0.4	(1/)
All sites:										
Well stocked	37.1	0.5	45.3	0.6	42.0	0.6	6.3	0.1	—	—
Medium stocked	20.7	0.3	29.3	0.4	25.4	0.4	4.2	0.1	6.2	0.1
Poorly stocked	3.3	0.1	16.5	0.2	14.1	0.2	1.8	(1/)	0.8	(1/)
Total	15.9	0.2	36.2	0.5	29.3	0.4	3.5	0.1	0.9	(1/)

1/ Less than 0.05 cord per acre.

Table 38.--Output of timber products from roundwood and plant residues, by products and species group, Florida, 1959

Product and species group	Standard unit	Total	From plant residue	From roundwood
		Units	Units	Units
Saw logs				
Softwood	M bd. ft. 1/	232,091	-	232,091
Hardwood	M bd. ft. 1/	37,847	--	37,847
Total	M bd. ft. 1/	269,938	--	269,938
Veneer logs and bolts				
Softwood	M bd. ft. 1/	654	--	654
Hardwood	M bd. ft. 1/	43,177	--	43,177
Total	M bd. ft. 1/	43,831	--	43,831
Pulpwood				
Softwood	Std. cords 2/	1,770,047	79,287	1,690,760
Hardwood	Std. cords 2/	64,836	3,318	61,518
Total	Std. cords 2/	1,834,883	82,605	1,752,278
Fuelwood 3/				
Softwood	Std. cords 2/	130,526	47,224	83,302
Hardwood	Std. cords 2/	156,629	42,963	113,666
Total	Std. cords 2/	287,155	90,187	196,968
Piling				
Softwood	M linear ft.	357	--	357
Hardwood	M linear ft.	--	--	--
Total	M linear ft.	357	--	357
Poles:				
Softwood	M pieces	315	--	315
Hardwood	M pieces	--	--	--
Total	M pieces	315	--	315
Posts:				
Softwood	M pieces	1,642	--	1,642
Hardwood	M pieces	69	--	69
Total	M pieces	1,711	--	1,711
Hewn ties:				
Softwood	M pieces	79	-	79
Hardwood	M pieces	76	--	76
Total	M pieces	155	--	155
Other industrial wood 4/				
Softwood	M cu. ft.	337	--	337
Hardwood	M cu. ft.	1,011	--	1,011
Total	M cu. ft.	1,348	--	1,348
All products				
Softwood	M cu. ft.	200,200	9,375	190,825
Hardwood	M cu. ft.	30,193	3,035	27,158
Total	M cu. ft.	230,393	12,410	217,983

1/ International $\frac{1}{4}$-inch rule.

2/ Rough wood basis.

3/ [illegible] and cooking, and excludes industrial use.

Table 39.--Output of timber products from roundwood, by source, product, and species group, Florida, 1959

(In thousand cubic feet)

Product and species group	From all roundwood	From growing stock			Material left following logging	From dead trees	From cull trees and limbs
		Total	Sawtimber trees	Poletimber trees			
Saw logs							
Softwood	42,635	40,469	39,263	1,206	--	230	1,936
Hardwood	6,952	6,783	6,783	--	--	--	169
Total	49,587	47,252	46,046	1,206	--	230	2,105
Veneer logs and bolts							
Softwood	98	97	97	--	--	--	1
Hardwood	6,485	6,418	6,418	--	--	--	67
Total	6,583	6,515	6,515	--	--	--	68
Pulpwood							
Softwood	134,245	113,558	86,319	10,753	16,486	98	20,589
Hardwood	4,885	3,982	1,373	2,135	474	--	903
Total	139,130	117,540	87,692	12,888	16,960	98	21,492
Fuelwood							
Softwood	5,431	262	-	25	237	144	5,025
Hardwood	7,332	527	--	54	473	312	6,493
Total	12,763	789	--	79	710	456	11,518
Piling							
Softwood	182	176	176	--	--	--	6
Hardwood	--	--	--	--	--	--	--
Total	182	176	176	--	--	--	6
Poles							
Softwood	6,075	5,893	5,893	--	--	--	182
Hardwood	--	--	--	--	--	--	--
Total	6,075	5,893	5,893	--	--	--	182
Posts							
Softwood	1,342	623	--	496	127	--	719
Hardwood	34	30	--	30	--	--	4
Total	1,376	653	--	526	127	--	723
Hewn ties							
Softwood	480	480	349	--	131	--	--
Hardwood	459	459	334	--	125	--	--
Total	939	939	683	--	256	--	--
Other industrial wood 1/							
Softwood	337	330	250	80	--	--	7
Hardwood	1,011	349	167	182	--	--	662
Total	1,348	679	417	262	--	--	669
All products							
Softwood	190,825	161,888	132,347	12,560	16,981	472	28,465
Hardwood	27,158	18,548	15,075	2,401	1,072	312	8,298
Total	217,983	180,436	147,422	14,961	18,053	784	36,763

1/ Includes excelsior bolts, turnery bolts, etc.

Table 30. --Timber cut from sawtimber and growing stock, by product and species group, Florida, 1958

Product	From sawtimber			From growing stock		
	Total	Soft-wood	Hard-wood	Total	Soft-wood	Hard-wood
	Thousand board feet			Thousand cubic feet		
Saw logs	237,541	200,527	37,014	52,626	43,842	8,784
Veneer logs and bolts	43,699	652	43,047	7,614	114	7,500
Pulpwood	405,974	399,555	6,419	118,257	113,991	4,266
Fuelwood	--	--	--	794	261	533
Piling	1,034	1,034	--	179	179	--
Poles	34,308	34,308	--	5,980	5,980	--
Posts	--	--	--	692	662	30
Hewn ties	8,202	4,191	4,011	2,417	1,235	1,182
Other industrial wood 1/	2,794	1,669	1,125	750	372	378
All products	733,552	641,936	91,616	189,309	166,636	22,673

1/ Includes excelsior bolts, turnery bolts, etc.

Table 31. --Disposition of timber cut from growing stock, Florida, 1958

Disposition	Softwood		Hardwood		Total	
	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent	Thousand cu. ft.	Percent
Left in woods (logging residue)	4,631	2.8	4,122	18.2	8,753	4.6
Transported to mill	162,005	97.2	18,551	81.8	180,556	95.4
Used in manufacture	140,434	84.3	8,301	36.6	148,735	78.6
Plant residue:	21,571	12.9	10,250	45.2	31,821	16.8
Used:	14,540	8.7	3,890	17.2	18,430	9.7
Coarse 1/	9,375	5.6	3,035	13.4	12,410	6.5
Fine	5,165	3.1	855	3.8	6,020	3.2
Unused:	7,031	4.2	6,360	28.0	13,391	7.1
Coarse	267	0.2	5,246	23.1	5,513	2.9
Fine	6,764	4.0	1,114	4.9	7,878	4.2
Total timber cut	166,636	100.0	22,673	100.0	189,309	100.0

1/ Excludes coarse material used for industrial fuel which is generally available for use when markets develop.

Table 32a. --Land area, by class and major forest type, for the entire State of Florida, 1934-1936, 1949, and 1959

(In thousand acres)

and class and forest type	Year of Survey			Change
	1934-1936	1949	1959	1949-1959
Commercial forest land:				
Pine and oak-pine type	17,124.8	14,790.8	11,624.0	-3,166.8
Hardwood type	4,734.9	1/ 6,660.3	1/ 7,961.8	+1,301.5
Total	21,859.7	21,451.1	19,585.8	-1,865.3
oncommercial forest land	1,644.2	1,595.9	1,430.0	-165.9
onforest land:				
Cropland	2,359.2	3,346.8	2,493.6	(2/)
Improved pasture	474.7	(3/)	2,383.1	(2/)
Idle or abandoned cropland	918.5	1,121.9	1,047.3	-74.6
Marsh or prairie	6,789.4	5,899.7	5,287.7	-612.0
Urban and other	727.3	1,063.2	1,786.0	+722.8
Total	11,269.1	11,431.6	12,997.7	+1,566.1
l land 4/	34,773.0	34,478.6	34,013.5	-465.1

1/ Includes palm type.
2/ Comparison not valid; pasture included with cropland in the 1949 Survey.
3/ Data not available; included with cropland.
4/ Excludes all water areas.

Table 32b. --Land area, by class and major forest type, Northeast Florida, 1934, 1949, and 1959

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1934	1949	1959	1949-1959
Commercial forest land:				
Pine and oak-pine type	5,755.3	4,894.0	4,286.0	-608.0
Hardwood type	1,776.8	1/ 2,707.7	1/ 2,881.2	+173.5
Total	7,532.1	7,601.7	7,167.2	-434.5
Noncommercial forest land	96.8	92.0	73.7	-18.3
Nonforest land:				
Cropland	950.8	869.5	667.3	(2/)
Improved pasture	48.1	(3/)	461.6	(2/)
Idle or abandoned cropland	443.9	415.7	397.2	-18.5
Marsh or prairie	487.2	290.7	365.4	+74.7
Urban and other	172.7	256.0	413.0	+157.0
Total	2,102.7	1,831.9	2,304.5	+472.6
All land 4/	9,731.6	9,525.6	9,545.4	+19.8

1/ Includes palm type.
2/ Comparison not valid; pasture included with cropland in the 1949 Survey.
3/ Data not available; included with cropland.
4/ Excludes all water areas.

Table 32c. --Lane area, by class and major forest type, Northwest Florida, 1934, 1949, and 1959

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1934	1949	1959	1949-1959
Commercial forest land:				
Pine and oak-pine type	4,631.1	4,235.5	3,268.2	-967.3
Hardwood type	1,386.4	1/ 1,692.5	1/ 2,453.8	+761.3
Total	6,017.5	5,928.0	5,722.0	-206.0
Noncommercial forest land	17.7	132.1	21.1	-111.0
Nonforest land:				
Cropland	699.9	700.8	623.9	(2/)
Improved pasture	37.2	(3/)	188.0	(2/)
Idle or abandoned cropland	219.5	234.3	220.9	-13.4
Marsh or prairie	103.8	127.4	105.8	-21.6
Urban and other	155.9	197.3	315.4	+118.1
Total	1,216.3	1,259.8	1,454.0	+194.2
All land 4/	7,251.5	7,319.9	7,197.1	-122.8

1/ Includes palm type.
2/ Comparison not valid; pasture included with cropland in the 1949 Survey.
3/ Data not available; included with cropland.
4/ Excludes all water areas.

Table 32d. --Lane area, by class and major forest type, Central Florida, 1936, 1949, and 1959

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1936	1949	1959	1949-195
Commercial forest land:				
Pine and oak-pine type	5,157.7	3,905.8	2,862.7	-1,043.1
Hardwood type	984.6	1/ 1,841.4	1/ 1,962.4	+121.0
Total	6,142.3	5,747.2	4,825.1	-922.1
Noncommercial forest land	177.7	232.0	130.7	-101.
Nonforest land:				
Cropland	562.3	1,136.1	927.1	(2/)
Improved pasture	297.6	(3/)	1,229.2	(2/)
Idle or abandoned cropland	189.6	234.4	241.7	+7.
Marsh or prairie	2,340.8	2,062.0	1,661.6	-400.
Urban and other	280.1	367.3	636.5	+269.
Total	3,670.4	3,799.8	4,696.1	+896.
All land 4/	9,990.4	9,779.0	9,651.9	-127.

1/ Includes palm type.
2/ Comparison not valid; pasture included with cropland in the 1949 Surv
3/ Data not available; included with cropland.
4/ Excludes all water areas.

Table 32e. --Land area, by class and major forest type, South Florida, 1936, 1949, and 1959

(In thousand acres)

Land class and forest type	Year of Survey			Change
	1936	1949	1959	1949-1959
Commercial forest land:				
Pine and oak-pine type	1,580.7	1,755.5	1,207.1	-548.4
Hardwood type	587.1	1/ 418.7	1/ 664.4	+245.7
Total	2,167.8	2,174.2	1,871.5	-302.7
Noncommercial forest land	1,352.0	1,139.8	1,204.5	+64.7
Nonforest land:				
Cropland	146.2	640.4	275.3	(2/)
Improved pasture	91.8	(3/)	504.3	(2/)
Idle or abandoned cropland	65.5	237.5	187.5	-50.0
Marsh or prairie	3,857.6	3,419.6	3,154.9	-264.7
Urban and other	118.6	242.6	421.1	+178.5
Total	4,279.7	4,540.1	4,543.1	+3.0
All land 4/	7,799.5	7,854.1	7,619.1	-235.0

1/ Includes palm type.
2/ Comparison not valid; pasture included with cropland in the 1949 Survey.
3/ Data not available; included with cropland.
4/ Excludes all water areas.

Table 33a.--Net volume[1] of growing stock and cull timber, by diameter class and species group, for the entire State of Florida, 1934-1936, 1949, and 1959

(In million cubic feet)

Species group	Year	All classes	Diameter class (inches)						
			6	8	10	12	14	16-18	20+
					GROWING STOCK				
Pine	1934-1936	3,222.0	177.5	572.0	711.6	637.6	457.8	426.7	238.8
	1949	3,349.6	283.6	669.0	941.2	711.1	404.0	265.2	75.5
	1959	3,169.7	326.5	710.9	790.8	662.2	355.7	264.9	58.7
Cypress	1934-1936	1,388.8	102.3	170.1	263.8	253.0	188.6	191.3	219.7
	1949	948.4	95.3	178.3	244.5	210.1	134.5	66.0	19.7
	1959	1,405.0	134.9	225.5	238.4	285.0	227.0	187.6	106.6
Hardwood	1934-1936	2,004.3	116.2	179.3	223.7	309.0	288.7	436.3	451.1
	1949	1,820.1	139.8	225.4	275.0	296.8	300.1	315.7	267.3
	1959	2,376.9	195.1	304.1	365.7	298.9	329.4	448.6	435.1
					CULL TIMBER[2]				
Pine	1934-1936	36.4	3.0	5.5	6.8	6.2	5.4	6.6	2.9
	1949	62.9	6.2	8.3	18.5	11.2	4.8	9.5	4.4
	1959	142.9	12.4	16.3	49.6	32.9	17.0	12.4	2.3
Cypress	1934-1936	117.9	28.3	26.5	20.2	15.4	8.3	8.1	11.1
	1949	160.4	16.1	23.4	19.8	22.9	15.9	14.9	47.4
	1959	242.3	20.3	24.8	82.5	48.9	22.9	22.2	20.7
Hardwood	1934-1936	841.4	144.3	139.3	128.5	116.9	88.7	102.5	121.2
	1949	1,424.6	198.7	174.8	201.3	200.1	149.4	201.0	299.3
	1959	1,575.1	178.0	184.4	236.1	272.1	208.9	264.6	231.0
					ALL TIMBER[2]				
Pine	1934-1936	3,258.4	180.5	577.5	718.4	643.8	463.2	433.3	241.7
	1949	3,412.5	289.8	677.3	959.7	722.3	408.8	274.7	79.9
	1959	3,312.6	338.9	727.2	840.4	695.1	372.7	277.3	61.0
Cypress	1934-1936	1,506.7	130.6	196.6	284.0	268.4	196.9	199.4	230.8
	1949	1,108.8	111.4	201.7	264.3	233.0	150.4	80.9	67.1
	1959	1,647.3	155.2	250.3	320.9	333.9	249.9	209.8	127.3
Hardwood	1934-1936	2,845.7	260.5	318.6	352.2	425.9	377.4	538.8	572.3
	1949	3,244.7	338.5	400.2	476.3	496.9	449.5	516.7	566.6
	1959	3,952.0	373.1	488.5	601.8	571.0	538.3	713.2	666.1

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards from survey to survey. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

[2] Excludes volume of palm.

Table 33b.--Net volume[1] of growing stock and cull timber, by diameter class and species group, Northeast Florida, 1934, 1949, and 1959

(In million cubic feet)

Species group	Year	All classes	Diameter class (inches)						
			6	8	10	12	14	16-18	20+
			GROWING STOCK						
Pine	1934	1,582.2	89.6	305.6	359.2	319.3	218.2	182.6	107.7
	1949	1,687.1	121.2	320.8	482.2	382.5	228.7	129.8	21.9
	1959	1,505.5	166.7	323.9	388.7	328.0	163.9	112.6	21.7
Cypress	1934	687.2	42.1	78.3	130.1	135.3	99.1	99.4	102.9
	1949	475.1	41.8	85.6	130.9	119.8	65.6	24.2	7.2
	1959	576.2	47.8	88.7	107.9	149.4	94.5	60.8	27.1
Hardwood	1934	906.7	50.1	80.1	98.6	132.0	124.7	193.9	227.3
	1949	734.8	58.0	88.6	118.5	120.2	126.5	117.5	105.5
	1959	1,019.2	91.4	128.1	146.8	132.0	135.9	189.2	195.8
			CULL TIMBER[2]						
Pine	1934	8.6	0.7	1.3	1.3	1.4	1.6	1.9	0.4
	1949	29.6	3.4	4.5	6.8	4.1	2.4	5.1	3.3
	1959	57.9	3.3	5.7	17.9	15.6	7.7	7.0	0.7
Cypress	1934	25.3	2.0	5.1	5.3	5.0	3.4	2.2	2.3
	1949	30.6	4.0	5.9	8.5	3.6	3.5	2.1	3.0
	1959	68.1	3.9	4.7	31.0	9.4	7.9	4.5	6.7
Hardwood	1934	365.0	61.7	60.8	52.2	50.9	36.9	45.4	57.1
	1949	586.5	79.5	81.6	90.3	87.9	64.8	89.3	93.1
	1959	688.2	71.0	76.8	115.9	123.7	96.4	110.2	94.2
			ALL TIMBER[2]						
Pine	1934	1,590.8	90.3	306.9	360.5	320.7	219.8	184.5	108.1
	1949	1,716.7	124.6	325.3	489.0	386.6	231.1	134.9	25.2
	1959	1,563.4	170.0	329.6	406.6	343.6	171.6	119.6	22.4
Cypress	1934	712.5	44.1	83.4	135.4	140.3	102.5	101.6	105.2
	1949	505.7	45.8	91.5	139.4	123.4	69.1	26.3	10.2
	1959	644.3	51.7	93.4	138.9	158.8	102.4	65.3	33.8
Hardwood	1934	1,271.7	111.8	140.9	150.8	182.9	161.6	239.3	284.4
	1949	1,321.3	137.5	170.2	208.8	208.1	191.3	206.8	198.6
	1959	1,707.4	162.4	204.9	262.7	255.7	232.3	299.4	290.0

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards from survey to survey. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

[2] Excludes volume of palm.

Table 33c.--Net volume[1] of growing stock and cull timber, by diameter class and species group, Northwest Florida, 1934, 1949, and 1959

(In million cubic feet)

Species group	Year	All classes	Diameter class (inches)						
			6	8	10	12	14	16-18	20+
				GROWING STOCK					
Pine	1934	906.1	51.5	149.7	180.8	173.8	133.4	136.4	80.5
	1949	1,084.5	125.6	223.8	282.6	203.0	115.6	92.8	41.1
	1959	1,238.6	118.9	290.0	290.8	248.2	143.2	118.0	29.5
Cypress	1934	221.7	13.2	22.0	32.0	34.3	34.5	37.7	48.0
	1949	84.3	5.9	13.1	15.3	12.7	12.3	18.8	6.2
	1959	215.4	16.1	29.0	27.6	32.4	35.7	46.0	28.6
Hardwood	1934	825.7	47.5	71.0	86.2	133.4	124.8	190.4	172.4
	1949	792.3	59.4	94.8	112.7	133.6	126.3	152.1	113.4
	1959	1,000.5	72.9	122.6	164.6	120.3	144.9	201.5	173.7
				CULL TIMBER[2]					
Pine	1934	9.3	0.7	1.7	2.1	1.7	1.4	1.0	0.7
	1949	18.2	0.7	2.4	8.5	3.0	1.3	1.3	1.0
	1959	62.7	7.6	7.6	25.8	10.9	7.8	3.0	--
Cypress	1934	24.2	2.6	5.0	4.7	3.8	2.1	3.1	2.9
	1949	25.8	0.6	1.6	2.0	0.9	1.5	2.1	17.1
	1959	58.5	3.0	8.3	11.0	8.0	8.4	10.3	9.5
Hardwood	1934	236.6	37.3	37.5	34.2	37.4	30.0	26.4	33.8
	1949	490.1	66.2	52.7	64.3	61.2	59.0	62.2	124.5
	1959	522.3	59.3	61.7	69.6	83.1	72.5	96.7	79.4
				ALL TIMBER[2]					
Pine	1934	915.4	52.2	151.4	182.9	175.5	134.8	137.4	81.2
	1949	1,102.7	126.3	226.2	291.1	206.0	116.9	94.1	42.1
	1959	1,301.3	126.5	297.6	316.6	259.1	151.0	121.0	29.5
Cypress	1934	245.9	15.8	27.0	36.7	38.1	36.6	40.8	50.9
	1949	110.1	6.5	14.7	17.3	13.6	13.8	20.9	23.3
	1959	273.9	19.1	37.3	38.6	40.4	44.1	56.3	38.1
Hardwood	1934	1,062.3	84.8	108.5	120.4	170.8	154.8	216.8	206.2
	1949	1,282.4	125.6	147.5	177.0	194.8	185.3	214.3	237.9
	1959	1,522.8	132.2	184.3	234.2	203.4	217.4	298.2	253.1

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards from survey to survey. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

[2] Excludes volume of palm.

Table [illegible]. --Net volume[1] of growing stock and cull timber, by diameter class and species group, Central Florida, 1936, 1949, and 1959

(In million cubic feet)

Species group	Year	All classes	Diameter class (inches)						
			6	8	10	12	14	16-18	20 +
			GROWING STOCK						
Pine	1936	523.2	25.3	90.2	132.8	105.7	71.8	65.4	32.0
	1949	462.1	27.7	99.1	139.0	106.4	50.4	28.6	10.9
	1959	313.0	27.7	74.3	85.0	60.6	32.3	26.7	6.4
Cypress	1936	286.0	28.0	41.6	67.0	55.1	33.5	30.9	29.9
	1949	258.7	32.9	51.7	64.4	52.9	42.5	13.7	0.6
	1959	384.9	40.0	68.8	62.1	65.7	63.1	59.4	25.8
Hardwood	1936	265.8	17.9	27.7	37.7	42.2	38.3	51.3	50.7
	1949	291.0	21.9	41.3	43.6	42.8	47.0	46.0	48.4
	1959	345.1	28.6	51.0	52.1	46.0	47.1	56.5	63.8
			CULL TIMBER[2]						
Pine	1936	9.9	1.0	1.2	2.0	1.8	1.2	1.8	0.9
	1949	13.8	2.1	1.1	2.7	4.1	0.7	3.1	--
	1959	19.0	1.2	2.5	5.3	5.5	1.1	1.8	1.6
Cypress	1936	22.2	3.7	5.0	4.1	2.7	1.5	1.3	3.9
	1949	52.3	3.2	5.9	3.9	7.2	3.1	5.9	23.1
	1959	56.3	4.3	4.5	22.4	16.6	2.6	4.2	1.7
Hardwood	1936	[illegible]	42.5	37.3	39.6	26.6	20.5	29.2	29.0
	1949	337.0	[illegible]	39.2	44.2	49.7	24.6	49.2	78.6
	1959	330.0	39.4	38.8	46.3	61.9	35.7	52.5	55.4
			ALL TIMBER[2]						
Pine	1936	533.1	26.3	91.4	134.8	107.5	73.0	67.2	32.9
	1949	[illegible]	29.8	100.2	141.7	110.5	51.1	31.7	10.9
	1959	332.0	28.9	76.8	90.3	66.1	33.4	28.5	8.0
Cypress	1936	308.2	31.7	46.6	71.1	57.8	35.0	32.2	33.8
	1949	311.0	36.1	57.6	68.3	60.1	45.6	19.6	23.7
	1959	441.2	44.3	73.3	84.5	82.3	65.7	63.6	27.5
Hardwood	1936	490.5	60.4	65.0	77.3	68.8	58.8	80.5	79.7
	1949	628.0	73.4	80.5	87.8	92.5	71.6	95.2	127.0
	1959	675.1	68.0	89.8	98.4	107.9	82.8	109.0	119.2

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards from survey to survey. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

[2] Excludes volume of palm.

Table 33e.--Net volume[1] of growing stock and cull timber, by diameter class and species group, South Florida, 1936, 1949, and 1959

(In million cubic feet)

Species group	Year	All classes	Diameter class (inches)						
			6	8	10	12	14	16-18	20 +
				GROWING STOCK					
Pine	1936	210.5	11.1	26.5	38.8	38.8	34.4	42.3	18.6
	1949	115.9	9.1	25.3	37.4	19.2	9.3	14.0	1.6
	1959	112.6	13.2	22.7	26.3	25.4	16.3	7.6	1.1
Cypress	1936	193.9	19.0	28.2	34.7	28.3	21.5	23.3	38.9
	1949	130.3	14.7	27.9	33.9	24.7	14.1	9.3	5.7
	1959	228.5	31.0	39.0	40.8	37.5	33.7	21.4	25.1
Hardwood	1936	6.1	0.7	0.5	1.2	1.4	0.9	0.7	0.7
	1949	2.0	0.5	0.7	0.2	0.2	0.3	0.1	--
	1959	12.1	2.2	2.4	2.2	0.6	1.5	1.4	1.8
				CULL TIMBER[2]					
Pine	1936	8.6	0.6	1.3	1.4	1.3	1.2	1.9	0.9
	1949	1.3	--	0.3	0.5	—	0.4	--	0.1
	1959	3.3	0.3	0.5	0.6	0.9	0.4	0.6	--
Cypress	1936	46.2	20.0	11.4	6.1	3.9	1.3	1.5	2.0
	1949	51.7	8.3	10.0	5.4	11.2	7.8	4.8	4.2
	1959	59.4	9.1	7.3	18.1	14.9	4.0	3.2	2.8
Hardwood	1936	15.1	2.8	3.7	2.5	2.0	1.3	1.5	1.3
	1949	11.0	1.5	1.3	2.5	1.3	1.0	0.3	3.1
	1959	34.6	8.3	7.1	4.3	3.4	4.3	5.2	2.0
				ALL TIMBER[2]					
Pine	1936	219.1	11.7	27.8	40.2	40.1	35.6	44.2	19.5
	1949	117.2	9.1	25.6	37.9	19.2	9.7	14.0	1.7
	1959	115.9	13.5	23.2	26.9	26.3	16.7	8.2	1.1
Cypress	1936	240.1	39.0	39.6	40.8	32.2	22.8	24.8	40.9
	1949	182.0	23.0	37.9	39.3	35.9	21.9	14.1	9.9
	1959	287.9	40.1	46.3	58.9	52.4	37.7	24.6	27.9
Hardwood	1936	21.2	3.5	4.2	3.7	3.4	2.2	2.2	2.0
	1949	13.0	2.0	2.0	2.7	1.5	1.3	0.4	3.1
	1959	46.7	10.5	9.5	6.5	4.0	5.8	6.6	3.8

---

[1] In order to provide a basis for valid comparisons, adjustments have been made to allow for differences in utilization standards from survey to survey. Thus, the volumes shown here will not agree with volumes previously published or current volumes appearing elsewhere in this report.

[2] Excludes volume of palm.

Table 34.--Timber-growth projections,[1] Florida, 1958 to 1989

Period	Assumed cut				Projected growth			
	All species	Pine	Cypress	Hard-wood	All species	Pine	Cypress	Hard-wood
LARGE SAWTIMBER (In million board feet)								
1958	240.4	146.1	27.5	66.8	456.4	243.5	72.8	140.1
1969	339.7	187.6	67.9	84.2	285.3	116.6	51.2	117.5
1979	272.8	117.3	58.1	97.4	218.4	46.3	41.4	130.7
1989	159.8	0.0	51.9	107.9	176.4	0.0	35.2	141.2
SMALL SAWTIMBER (In million board feet)								
1958	493.2	465.4	3.0	24.8	861.3	685.7	92.6	83.0
1969	608.1	531.3	46.1	30.7	673.4	545.1	67.0	61.3
1979	650.7	565.4	49.8	35.5	716.0	579.2	70.7	66.1
1989	647.6	552.4	55.1	40.1	712.9	566.2	76.0	70.7
GROWING STOCK (In million cubic feet)								
1958	189.3	159.5	7.1	22.7	311.8	211.8	35.4	64.6
1969	274.8	209.1	29.7	36.0	310.3	211.9	35.0	63.4
1979	292.3	218.9	29.5	43.9	327.8	221.7	34.8	71.3
1989	304.6	223.4	29.9	51.3	340.1	226.2	35.2	78.7
CULL TIMBER (In million cubic feet)								
1958	8.7	0.4	0.0	8.3	36.9	5.2	2.7	29.0
1969	39.3	10.0	5.5	23.8	58.1	9.5	6.1	42.5
1979	44.7	10.2	5.2	29.3	63.5	9.7	5.8	48.0
1989	50.4	10.2	5.3	34.9	69.2	9.7	5.9	53.6
ALL TIMBER (In million cubic feet)								
1958	198.0	159.9	7.1	31.0	348.7	217.0	38.1	93.6
1969	314.1	219.1	35.2	59.8	368.4	221.4	41.1	105.9
1979	337.0	229.1	34.7	73.2	391.3	231.4	40.6	119.3
1989	355.0	233.6	35.2	86.2	409.3	235.9	41.1	132.3

---

[1] Based on projection of average annual change between 1935 and 1958.

Table 35a.--County area, by class, Northeast Florida, 1959

County	Total area 1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Alachua	615.0	285.7	44.7	2.5	282.1	49.5
Baker	376.3	22.2	1.9	1.9	350.3	93.6
Bradford	195.2	44.9	7.7	--	142.6	76.1
Clay	412.2	44.4	30.9	1.3	335.6	88.0
Columbia	[illegible]	142.0	1.3	9.5	352.2	69.9
Dixie	453.8	39.1	19.1	7.2	388.4	89.3
Duval	537.6	151.0	46.7	2.3	337.6	68.8
Flagler	322.5	39.1	15.6	2.8	265.0	[illegible]
Gilchrist	222.7	76.9	1.1	--	144.7	65.3
Hamilton	329.6	68.4	3.4	1.1	256.7	78.7
Lafayette	352.6	52.9	9.2	0.2	290.3	84.5
Levy	727.7	172.1	27.3	2.4	525.9	75.1
Madison	453.1	127.3	7.9	(2/)	317.9	71.4
Marion	1,057.3	297.6	27.9	1.5	730.3	70.9
Nassau	429.4	58.0	17.8	0.9	352.7	85.7
Putnam	562.6	82.6	60.0	0.6	419.4	83.4
St. Johns	422.4	97.7	36.3	4.6	283.8	73.5
Suwannee	439.7	234.4	7.4	0.7	197.2	45.6
Taylor	673.3	63.0	21.0	10.5	578.8	88.7
Union	156.8	23.9	3.2	--	129.7	84.4
Volusia	772.5	181.3	81.5	23.7	486.0	70.3
Total	10,017.3	2,304.5	471.9	73.7	7,167.2	75.1

1/ Gross area from Bureau of the Census, 1950.

2/ Less than 50 acres.

Table 35b.--County area, by class, Northwest Florida, 1959

County	Total area 1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Bay	551.0	49.3	74.7	0.5	426.5	89.5
Calhoun	362.9	51.3	7.6	--	[illegible]	[illegible]
Escambia	484.5	122.0	68.6	2.5	291.4	70.1
Franklin	361.6	32.3	17.6	[illegible]	[illegible]	90.4
Gadsden	334.7	88.2	10.2	--	[illegible]	72.8
Gulf	369.9	22.1	18.8	1.4	327.6	[illegible]
Holmes	309.8	116.5	[illegible]	--	190.8	62.1
Jackson	606.7	268.3	[illegible]	1.6	318.5	54.1
Jefferson	389.8	133.9	[illegible]	--	248.7	[illegible]
Leon	445.5	[illegible]	[illegible]	[illegible]	[illegible]	70.1
Liberty	540.8	10.4	8.2	[illegible]	[illegible]	96.7
Okaloosa	641.9	87.8	39.8	--	514.3	85.4
Santa Rosa	737.3	111.5	86.5	--	539.3	82.9
Wakulla	406.4	65.1	16.2	[illegible]	[illegible]	[illegible]
Walton	726.4	95.5	[illegible]	[illegible]	[illegible]	[illegible]
Washington	391.0	[illegible]	16.3	-	303.9	81.1
Total	7,660.2	1,454.0	463.1	21.1	5,722.0	79.5

1/ Gross area from Bureau of the Census, 1950.

Table 35c.--County area, by class, Central Florida, 1959

County	Total area 1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
revard	839.1	398.6	202.9	26.5	211.1	[illegible]
itrus	423.0	106.2	78.0	1.9	236.9	68.7
e Soto	416.6	209.2	38.6	0.4	168.4	44.6
ardee	403.2	155.3	7.6	0.4	239.9	60.6
ernando	325.1	90.6	19.5	0.3	214.7	70.3
ighlands	716.2	381.3	63.5	17.1	254.3	39.0
illsborough	679.7	359.9	31.4	10.9	277.5	42.8
dian River	350.7	189.8	46.1	9.5	105.3	34.6
ake	744.3	299.4	143.6	0.6	300.7	50.1
lanatee	502.4	158.3	58.1	14.8	271.2	61.0
keechobee	499.2	325.5	19.7	1.0	153.0	31.9
ange	641.9	264.1	65.9	4.2	307.7	53.4
sceola	938.9	365.5	104.8	6.9	461.7	55.4
asco	494.1	205.9	23.3	6.2	258.7	54.9
inellas	197.8	99.2	39.2	4.5	54.9	34.6
olk	1,310.7	529.8	143.8	5.8	631.3	54.1
. Lucie	400.6	191.3	52.8	12.9	143.6	41.3
arasota	396.8	127.5	42.0	6.7	220.6	62.2
eminole	225.3	90.4	26.3	(2/)	108.6	54.6
mter	367.4	148.3	14.0	0.1	205.0	58.0
Total	10,873.0	4,696.1	1,221.1	130.7	4,825.1	50.0

1/ Gross area from Bureau of the Census, 1950.

2/ Less than 50 acres.

Table 35d.--County area, by class, South Florida, 1959

County	Total area 1/	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Broward	780.8	667.2	[illegible]	69.7	17.2	2.3
Charlotte	532.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Collier	1,356.2	358.0	83.7	[illegible]	[illegible]	[illegible]
Dade	1,349.8	[illegible]	73.4	[illegible]	[illegible]	2.2
Glades	574.7	396.2	23.8	17.1	137.6	25.0
Hendry	[illegible]	407.1	[illegible]	[illegible]	[illegible]	41.5
Lee	643.2	179.6	160.3	60.4	242.9	50.3
Martin	372.5	117.7	66.4	17.0	171.4	56.0
[illegible]	907.5	360.7	[illegible]	[illegible]	[illegible]	2.8
Palm Beach	1,649.9	912.2	435.9	136.4	165.4	13.6
Total	8,928.0	4,543.1	1,308.9	1,204.5	1,871.5	24.6

1/ Gross area from Bureau of the Census, 1950.

Table 36a.--Ownership of commercial forest land, by county,
Northeast Florida, 1959

(In thousand acres)

County	Total commercial	Public			Private
		National forest	Other public	Total	
Alachua	282.1	--	9.5	9.5	272.6
Baker	350.3	77.5	0.1	77.6	272.7
Bradford	142.6	--	9.9	9.9	132.7
Clay	335.6	--	104.4	104.4	231.2
Columbia	352.2	73.0	0.6	73.6	278.6
Dixie	388.4	--	0.5	0.5	387.9
Duval	337.6	--	8.3	8.3	329.3
Flagler	265.0	-	0.4	0.4	264.6
Gilchrist	144.7	-	0.4	0.4	144.3
Hamilton	256.7	--	--	--	256.7
Lafayette	290.3	--	-	--	290.3
Levy	525.9	-	0.3	0.3	525.6
Madison	317.9	--	0.2	0.2	317.7
Marion	730.3	248.6	8.8	257.4	472.9
Nassau	352.7	-	4.2	4.2	348.5
Putnam	419.4	19.2	10.8	30.0	389.4
St. Johns	283.8	--	1.3	1.3	282.5
Suwannee	197.2		--	--	197.2
Taylor	578.8	-	0.4	0.4	578.4
Union	129.7	--	9.0	9.0	120.7
Volusia	486.0	--	1.9	1.9	484.1
Total	7,167.2	418.3	171.0	589.3	6,577.9

Table 36b.--Ownership of commercial forest land, by county,
Northwest Florida, 1959

(In thousand acres)

County	Total commercial	Public			Private
		National forest	Other public	Total	
Bay	426.5	--	27.3	27.3	399.2
Calhoun	304.0	--	2.8	2.8	301.2
Escambia	291.4	--	3.3	3.3	288.1
Franklin	311.0	21.0	0.9	21.9	289.1
Gadsden	236.3	--	1.9	1.9	234.4
Gulf	327.6	--	1.3	1.3	326.3
Holmes	190.8	--	0.7	0.7	190.1
Jackson	318.5	--	5.9	5.9	312.6
Jefferson	248.7	--	4.3	4.3	244.4
Leon	304.9	100.9	2.0	102.9	202.0
Liberty	515.2	257.4	--	257.4	257.8
Okaloosa	514.3	--	279.3	279.3	235.0
Santa Rosa	539.3	--	187.5	187.5	351.8
Wakulla	323.6	163.6	32.9	196.5	127.1
Walton	566.0	--	140.8	140.8	425.2
Washington	303.9	--	1.9	1.9	302.0
Total	5,722.0	542.9	692.8	1,235.7	4,486.3

Table 36c.--Ownership of commercial forest land, by county,
Central Florida, 1959

(In thousand acres)

County	Total commercial	Public			Private
		National forest	Other public	Total	
Brevard	211.1		6.8	6.8	204.3
Citrus	236.9	-	43.7	43.7	193.2
De Soto	168.4	--	0.7	0.7	167.7
Hardee	239.9	--	1.2	1.2	238.7
Hernando	214.7	--	35.2	35.2	179.5
Highlands	254.3	-	46.1	46.1	208.2
Hillsborough	277.5	--	1.1	1.1	276.4
Indian River	105.3	-	1.9	1.9	103.4
Lake	300.7	65.9	2.3	68.2	232.5
Manatee	271.2	-	0.2	0.2	271.0
Okeechobee	153.0	--	0.4	0.4	152.6
Orange	307.7	-	0.4	0.4	307.3
Osceola	461.7	--	0.5	0.5	461.2
Pasco	258.7	--	7.9	7.9	250.8
Pinellas	54.9	--	0.7	0.7	54.2
Polk	631.3	--	22.1	22.1	609.2
St. Lucie	143.6	-	1.6	1.6	142.0
Sarasota	220.6	--	0.4	0.4	220.2
Seminole	108.6	-	--	--	108.6
Sumter	205.0	-	31.5	31.5	173.5
Total	4,825.1	65.9	204.7	270.6	4,554.5

Table 36d.--Ownership of commercial forest land, by county,
South Florida, 1959

(In thousand acres)

County	Total commercial	Public			Private
		National forest	Other public	Total	
Broward	17.2	--	1.3	1.3	15.9
Charlotte	258.7	--	48.1	48.1	210.6
Collier	536.8	--	4.9	4.9	531.9
Dade	28.5	-	4.5	4.5	24.0
Glades	137.6	--	--	--	137.6
Hendry	295.8	--	19.6	19.6	276.2
Lee	242.9	--	0.7	0.7	242.2
Martin	171.4	--	0.9	0.9	170.5
Monroe	17.2	--	--	--	17.2
Palm Beach	165.4	--	42.0	42.0	123.4
Total	1,871.5	--	122.0	122.0	1,749.5

Table 37a.--Net volume[1] of sawtimber, by county and species group, Northeast Florida, 1959

(In million board feet)

County	Softwood	Hardwood	Total
lachua	201.2	112.6	313.8
aker	640.3	120.7	761.0
radford	159.6	37.1	196.7
lay	207.2	113.6	320.8
olumbia	474.7	65.6	540.3
ixie	323.2	443.7	766.9
uval	101.4	236.0	337.4
lagler	489.3	90.9	580.2
ilchrist	58.4	54.2	112.6
amilton	419.0	72.0	491.0
afayette	238.9	142.5	381.4
evy	360.1	349.8	709.9
adison	363.0	139.2	502.2
arion	570.3	226.1	796.4
assau	238.0	205.6	443.6
utnam	208.4	179.0	387.4
. Johns	282.6	188.0	470.6
uwannee	96.8	173.5	270.3
aylor	725.6	233.1	958.7
nion	112.4	54.7	167.1
olusia	499.4	138.4	637.8
Total	6,769.8	3,376.3	10,146.1

[1] Log scale, International $\frac{1}{4}$-inch rule.

Table 37b.--Net volume[1] of sawtimber, by county and species group, Northwest Florida, 1959

(In million board feet)

County	Softwood	Hardwood	Total
Bay	111.0	15.8	126.8
Calhoun	125.1	146.0	271.1
Escambia	292.5	121.2	413.7
Franklin	221.2	102.2	323.4
Gadsden	160.7	239.8	400.5
Gulf	194.9	239.3	434.2
Holmes	105.3	100.2	205.5
Jackson	140.9	344.7	485.6
Jefferson	481.9	241.5	723.4
Leon	476.1	266.0	742.1
Liberty	679.5	502.1	1,181.6
Okaloosa	386.2	123.9	510.1
Santa Rosa	565.8	256.2	822.0
Wakulla	416.3	202.8	619.1
Walton	142.2	115.0	257.2
Washington	211.5	129.8	341.3
Total	4,711.1	[illegible]	7,857.6

[1] Log scale, International $\frac{1}{4}$-inch rule.

Table 37c.--Net volume[1] of sawtimber, by county and species group, Central Florida, 1959

(In million board feet)

County	Softwood	Hardwood	Total
vard	58.7	58.3	117.0
rus	121.6	57.7	179.3
Soto	17.5	40.7	58.2
dee	46.6	21.5	68.1
nando	95.4	113.8	209.2
hlands	85.2	29.2	114.4
lsborough	291.0	109.3	400.3
ian River	45.9	7.1	53.0
e	139.2	81.8	221.0
natee	30.8	27.2	58.0
echobee	26.0	4.8	30.8
nge	148.3	50.3	198.6
eola	240.1	69.7	309.8
co	287.0	43.9	330.9
ellas	29.2	1.9	31.1
k	227.5	156.9	384.4
Lucie	24.5	3.7	28.2
asota	46.8	4.4	51.2
nole	65.2	63.1	128.3
ter	207.1	136.7	343.8
Total	2,233.6	1,082.0	3.315.6

[1] Log scale, International $\frac{1}{4}$-inch rule.

Table 37d.--Net volume[1] of sawtimber, by county and species group, South Florida, 1959

(In million board feet)

County	Softwood	Hardwood	Total
Broward	7.3	--	7.3
Charlotte	20.1	--	20.1
Collier	592.2	19.9	612.1
Dade	15.1	--	15.1
Glades	166.6	--	166.6
Hendry	93.5	13.9	107.4
Lee	62.4	--	62.4
Martin	20.5	1.3	21.8
Monroe	6.0	--	6.0
Palm Beach	46.3	--	46.3
Total	1,030.0	35.1	1,065.1

[1] Log scale, International $\frac{1}{4}$-inch rule.

Table 38a. --Net volume[1] of growing stock and cull timber, by species group and county, Northeast Florida, 1959

(In thousand cords)

County	Growing stock				Cull timber [2]				Total all timber
	Pine	Cypress	Hardwood	Total	Pine	Cypress	Hardwood	Total	
Alachua	653	166	512	1, 331	7	7	305	319	1, 650
Baker	2, 693	430	592	3, 715	41	52	290	383	4, 098
Bradford	617	76	172	865	- -	8	23	31	896
Clay	844	144	431	1, 419	26	9	229	264	1, 683
Columbia	1, 555	494	587	2, 636	- -	28	291	319	2, 955
Dixie	947	655	1, 735	3, 337	- -	25	1, 437	1, 462	4, 799
Duval	407	50	911	1, 368	—	11	359	370	1, 738
Flagler	905	807	423	2, 135	24	49	1, 079	1, 152	3, 287
Gilchrist	94	161	176	431	- -	10	306	316	747
Hamilton	1, 304	246	505	2, 055	- -	10	262	272	2, 327
Lafayette	888	311	639	1, 838	19	5	242	266	2, 104
Levy	1, 027	561	1, 431	3, 019	65	41	2, 205	2, 311	5, 330
Madison	823	504	776	2, 103	21	10	335	366	2, 469
Marion	2, 537	139	1, 071	3, 747	49	- -	734	783	4, 530
Nassau	871	266	1, 034	2, 171	11	15	668	694	2, 865
Putnam	800	63	811	1, 674	73	5	831	909	2, 583
St. Johns	977	171	977	2, 125	42	16	666	724	2, 849
Suwannee	291	- -	642	933	22	- -	257	279	1, 212
Taylor	1, 844	709	1, 312	3, 865	- -	32	1, 506	1, 538	5, 403
Union	363	204	330	897	—	16	69	85	982
Volusia	962	1, 316	716	2, 994	55	84	811	950	3, 944
Total	21, 402	7, 473	15, 783	44, 658	455	433	12, 905	13, 793	58, 451

[1] Sound wood and bark.
[2] Includes volume of palm.

Table 38b. --Net volume[1] of growing stock and cull timber, by species group and county, Northwest Florida, 1959

(In thousand cords)

County	Growing stock				Cull timber [2]				Total all timber
	Pine	Cypress	Hardwood	Total	Pine	Cypress	Hardwood	Total	
Bay	895	22	183	1, 100	50	7	83	140	1, 240
Calhoun	756	61	746	1, 563	21	- -	194	215	1, 778
Escambia	1, 272	59	532	1, 863	3	- -	153	156	2, 019
Franklin	763	458	472	1, 693	52	42	208	302	1, 995
Gadsden	663	- -	1, 276	1, 939	3	—	308	311	2, 250
Gulf	596	205	1, 127	1, 928	- -	39	588	627	[illegible], 555
Holmes	545	24	621	1, 190	5	7	283	295	1, 485
Jackson	719	53	1, 415	2, 187	[illegible]	21	218	248	2, 435
Jefferson	1, 375	247	1, 222	2, 844	9	1	480	490	3, 334
Leon	1, 791	56	1, 164	3, 011	14	3	265	282	3, 293
Liberty	2, 095	705	1, 995	4, 795	19	210	809	1, 038	5, 833
Okaloosa	1, 407	138	840	2, 385	36	26	440	502	2, 887
Santa Rosa	1, 836	221	1, 098	3, 155	- -	50	466	516	3, 671
Wakulla	1, 812	48	938	2, 798	49	19	449	517	3, 315
Walton	833	50	851	1, 734	61	35	495	591	2, 325
Washington	400	455	721	1, 576	44	20	487	551	2, 127
Total	17, 758	2, 802	15, 201	35, 761	375	480	5, 926	6, 781	42, 542

[1] Sound wood and bark.
[2] Includes volume of palm.

Table 38c.--Net volume 1/ of growing stock and cull timber, by species group and county, Central Florida, 1959

(In thousand cords)

County	Growing stock				Cull timber 2/				Total all timber
	Pine	Cypress	Hardwood	Total	Pine	Cypress	Hardwood	Total	
Brevard	218	33	262	513	14	6	714	734	1,247
Citrus	347	161	292	800	4	10	717	731	1,531
De Soto	66	21	190	277	—	--	374	374	651
Hardee	163	16	90	269	5	—	234	239	508
Hernando	328	4	640	972	--	--	424	424	1,396
Highlands	162	124	204	490	--	7	179	186	676
Hillsborough	329	790	490	1,609	—	33	342	375	1,984
Indian River	95	127	44	266	7	11	298	316	582
Lake	408	388	424	1,220	14	14	1,425	1,453	2,673
Manatee	153	--	119	272	5	--	131	136	408
Okeechobee	69	74	95	238	—	5	382	387	625
Orange	308	472	396	1,176	--	19	790	809	1,985
Osceola	434	398	331	1,163	--	67	638	705	1,868
Pasco	166	897	326	1,389	—	73	199	272	1,661
Pinellas	77	63	18	158	2	-	33	35	193
Polk	498	872	887	2,257	15	83	727	825	3,082
St. Lucie	67	29	12	108	2	--	226	228	336
Sarasota	266	--	24	290	22	--	1,301	1,323	1,613
Seminole	162	39	278	479	8	4	1,349	1,361	1,840
Sumter	211	608	631	1,450	--	10	320	330	1,780
Total	4,527	5,116	5,753	15,396	98	342	10,803	11,243	26,639

1/ Sound wood and bark.
2/ Includes volume of palm.

Table 38d.--Net volume 1/ of growing stock and cull timber, by species group and county, South Florida, 1959

(In thousand cords)

County	Growing stock				Cull timber 2/				Total all timber
	Pine	Cypress	Hardwood	Total	Pine	Cypress	Hardwood	Total	
Broward	6	28	--	34	—	2	34	36	70
Charlotte	74	10	--	84	--	2	64	66	150
Collier	632	1,912	171	2,715	7	434	1,781	2,222	4,937
Dade	66	--	--	66	--	--	6	6	72
Glades	253	396	7	656	--	16	343	359	1,015
Hendry	200	328	69	597	--	77	544	621	1,218
Lee	59	299	-	358	3	4	46	53	411
Martin	77	1	7	85	-	2	403	405	490
Monroe	23	42	--	65	-	4	--	4	69
Palm Beach	204	25	—	229	1	3	69	76	305
Total	1,594	3,041	254	4,889	14	544	3,290	3,848	8,737

1/ Sound wood and bark.
2/ Includes volume of palm.

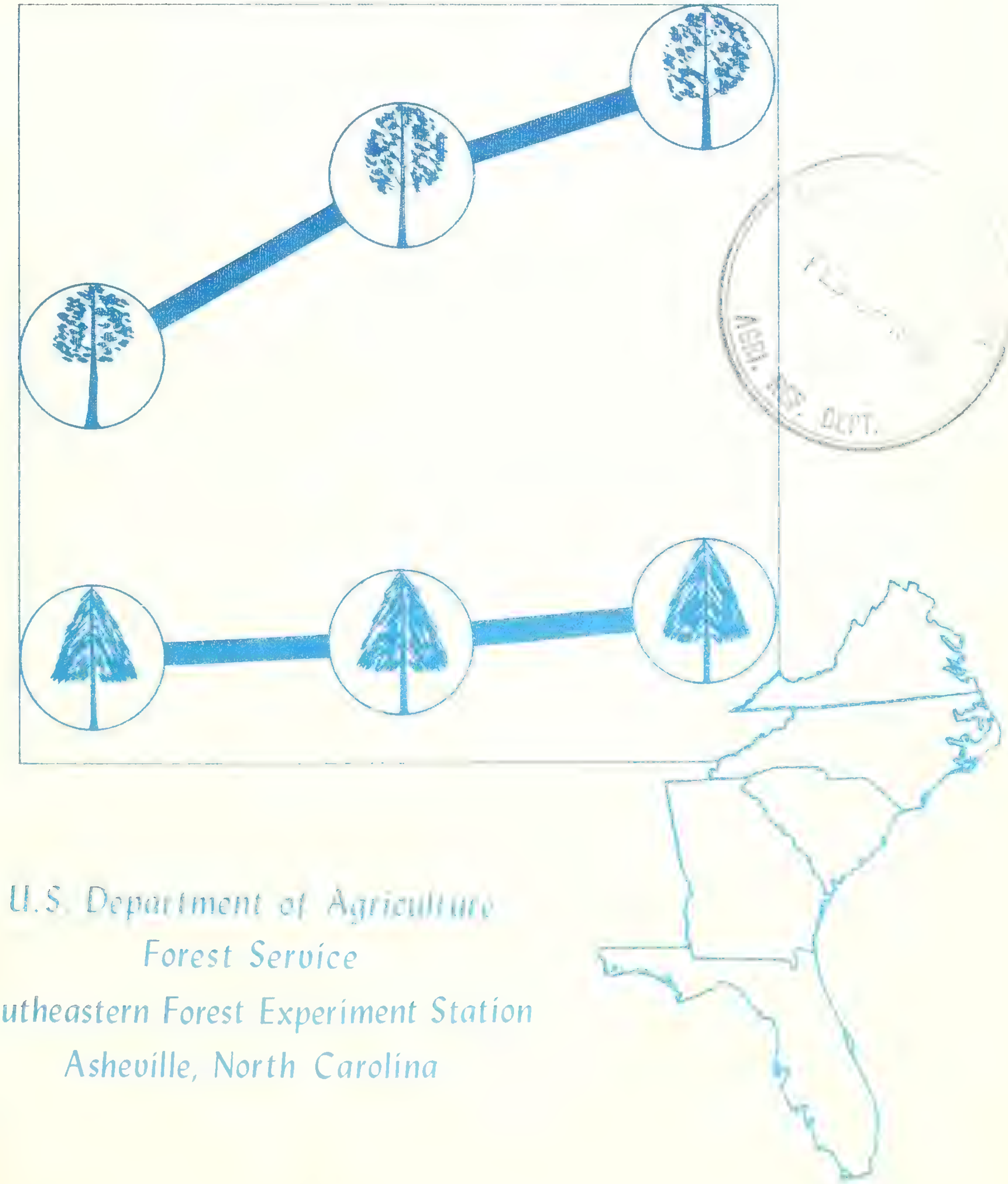
EST SURVEY RELEASE NO. 58

November 1961

TIMBER TRENDS IN THE SOUTHEAST

by Robert W. Larson, Agnes C. Nichols,

and Marcus H. Goforth



AGRI. RES. DEPT.

U.S. Department of Agriculture
Forest Service
Southeastern Forest Experiment Station
Asheville, North Carolina

HIGHLIGHTS

Some trends in the Southeast favor the timber supply but others do not. Forest area is increasing, but hardwoods are replacing pine on thousands of acres every year. Total pine volume is increasing slightly, but the volume in pine trees large enough and of high enough quality to make saw logs is decreasing. Also, the most recent surveys disclose that in a number of ways timber trends are less favorable now than 10 years ago. The upward trend in forest area is leveling off. More forest land has shifted from pine to hardwood type during the past 10 years than during the previous 10 years. Total pine volume has not increased so much and pine sawtimber has decreased more. Small pine sawtimber and large hardwood sawtimber, which increased between 1940 and 1950, have decreased since 1950.

The outlook is for continued expansion of forest industries, an increasing cut from the same or less forest area, and the need to grow more and better-quality timber despite a rising tide of encroaching low-quality hardwoods and shrubs.

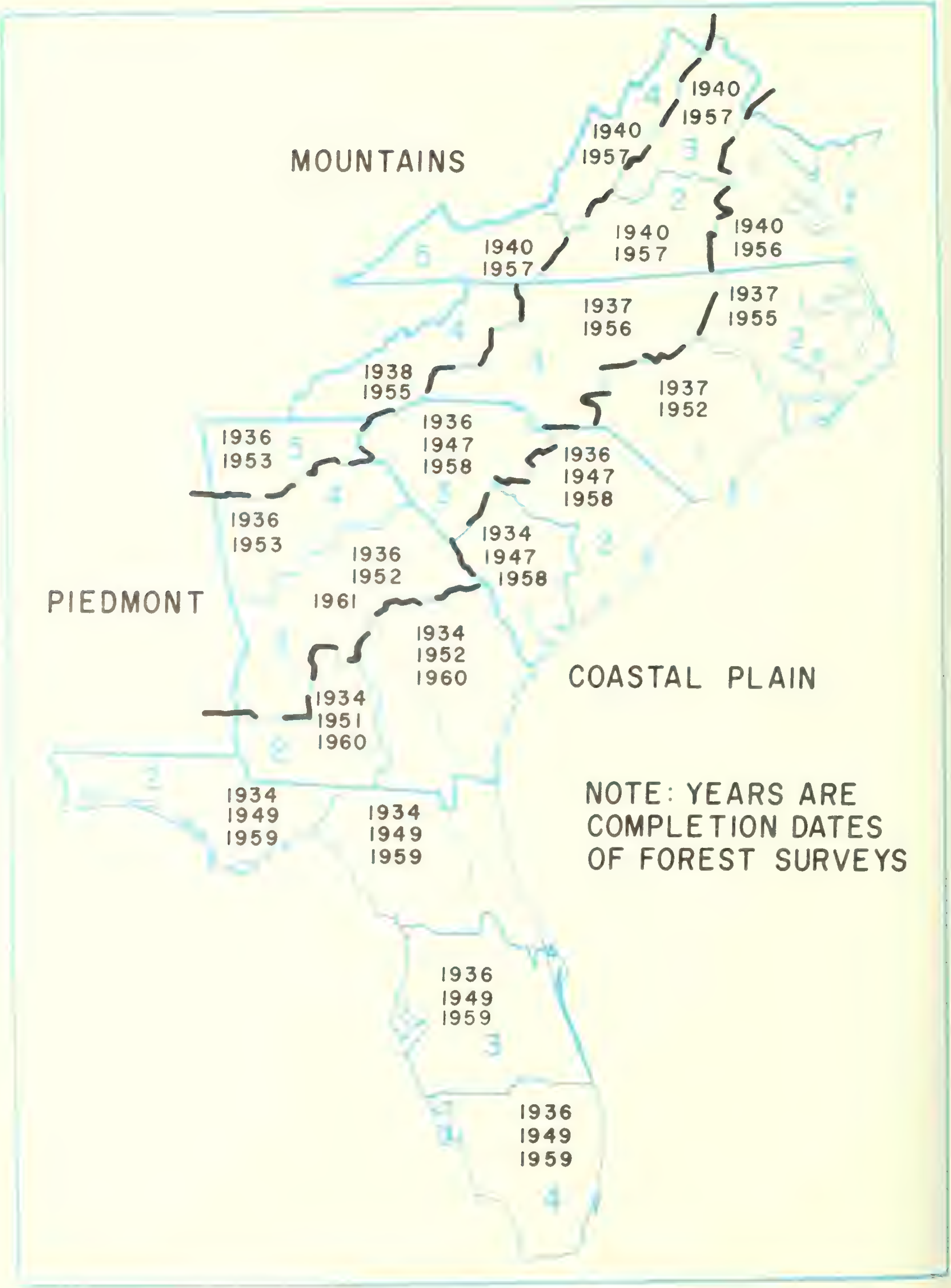
FOREWORD

A continuing project of the Southeastern Forest Experiment Station is periodically surveying the timber resources of the five southeastern states it serves. As shown in the map on the next page, the first survey in the Southeast was completed in North Florida, South Georgia, and the Southern Coastal Plain of South Carolina in 1934. Since then, the entire Southeast has been surveyed twice, and South Carolina, Florida, and Georgia three times. Regionwide statistics on timber volume, growth, cut, and forest areas were summarized as part of the Reappraisal Report in 1945 and the Timber Resource Review in 1953.

Since 1953, nearly all the commercial forest area in the Southeast has been resurveyed. This report summarizes forest statistics for 1960 and also presents comparable estimates for 1940 and 1950 to show trends over the past two decades.

Estimates for these selected years were obtained by interpolating and projecting the average annual change in forest area and number of trees by 2-inch d. b. h. classes between surveys. Where the results of three surveys are available, differences in trends between the two decades are shown. Where only two surveys are available, the trend is based on the average annual change between the first two surveys.

Over the years, methods of computing gross tree volume and loss of volume due to cull and defect have steadily improved. Also, the specifications defining growing stock trees and sawtimber have become more exact and more in line with current utilization practices. In order to insure comparability and eliminate from the trends the effect of changes in specifications and procedures, net volume per tree and specifications for growing stock for the most recent survey were applied to the number of trees for all three selected years. Thus, figures shown here will not necessarily agree with previously published figures even where inventory dates coincide with the selected years.



NOTE: YEARS ARE COMPLETION DATES OF FOREST SURVEYS

Forest Survey Units and physiographic provinces in the Southeast.

TIMBER TRENDS IN THE SOUTHEAST

by

Robert W. Larson, Agnes C. Nichols,
and Marcus H. Goforth

UPWARD TREND IN FOREST AREA LEVELING OFF

Commercial forest area has been on the increase in the Southeast since the early thirties. During the past 20 years (1940 to 1960), forest area has increased 4.5 million acres, or about 5 percent. In 1960, forests covered 92 million acres, or 63 percent of the 147 million acres of land in the southeastern 5-state area.

Most of the increase in forest land has taken place in the Piedmont, where, as a result of cropland abandonment and reversion to forest, forest area has increased 20 percent since 1940. In contrast to the Piedmont, forest area in the Coastal Plain has declined, mainly because of recent shifts from forest to nonforest uses in Florida. Forest area in the Mountains has increased 12 percent.

As a result of these changes, the Coastal Plain, which in 1940 was the most heavily forested area, now has the lowest proportion of forest land of the three major provinces. The proportion of forest area increased from 52 to 63 percent in the Piedmont, from 59 to 66 percent in the Mountains, but dropped from 63 to 61 percent in the Coastal Plain.

Most of the increase in forest area took place before 1950; since 1950, forest area has increased only 1 percent, compared to 4 percent between 1940 and 1950. This reflects some leveling-off of the upward trend in the Piedmont but mostly a shift from forest to nonforest uses in the Coastal Plain. For example, forest area in the South Carolina Piedmont increased 16 percent between 1940 and 1950 but increased only 3 percent between 1950 and 1960 (fig. 1). On the other hand, the recently completed survey for Central Georgia shows no change in the upward trend; forest area increased 12 percent during both the past and previous decades. In the Coastal Plain, all sections of Florida and the Northern Coastal Plain in South Carolina have less forest area now than in 1950. Forest area continued to increase slightly in Southeast Georgia but has remained the same in Southwest Georgia during the past 10 years.

Forest area increased in all Mountain units between the first and second surveys. A third survey for a Mountain unit has not yet been completed.

HARDWOODS CONTINUE TO REPLACE PINE

In response to better fire protection, natural succession, and repeated cutting of pine from mixed pine-hardwood stands, hardwoods have been replacing pine on a large area in the Southeast for many years. During the past 20 years, the area of pine and oak-pine type dropped from 58 million acres in 1940 to 49 million acres in 1960. Over half this reduction took place during the past 10 years. The result is that the percentage of forest area in pine and oak-pine type was 53 percent in 1960 compared to 66 percent in 1940.

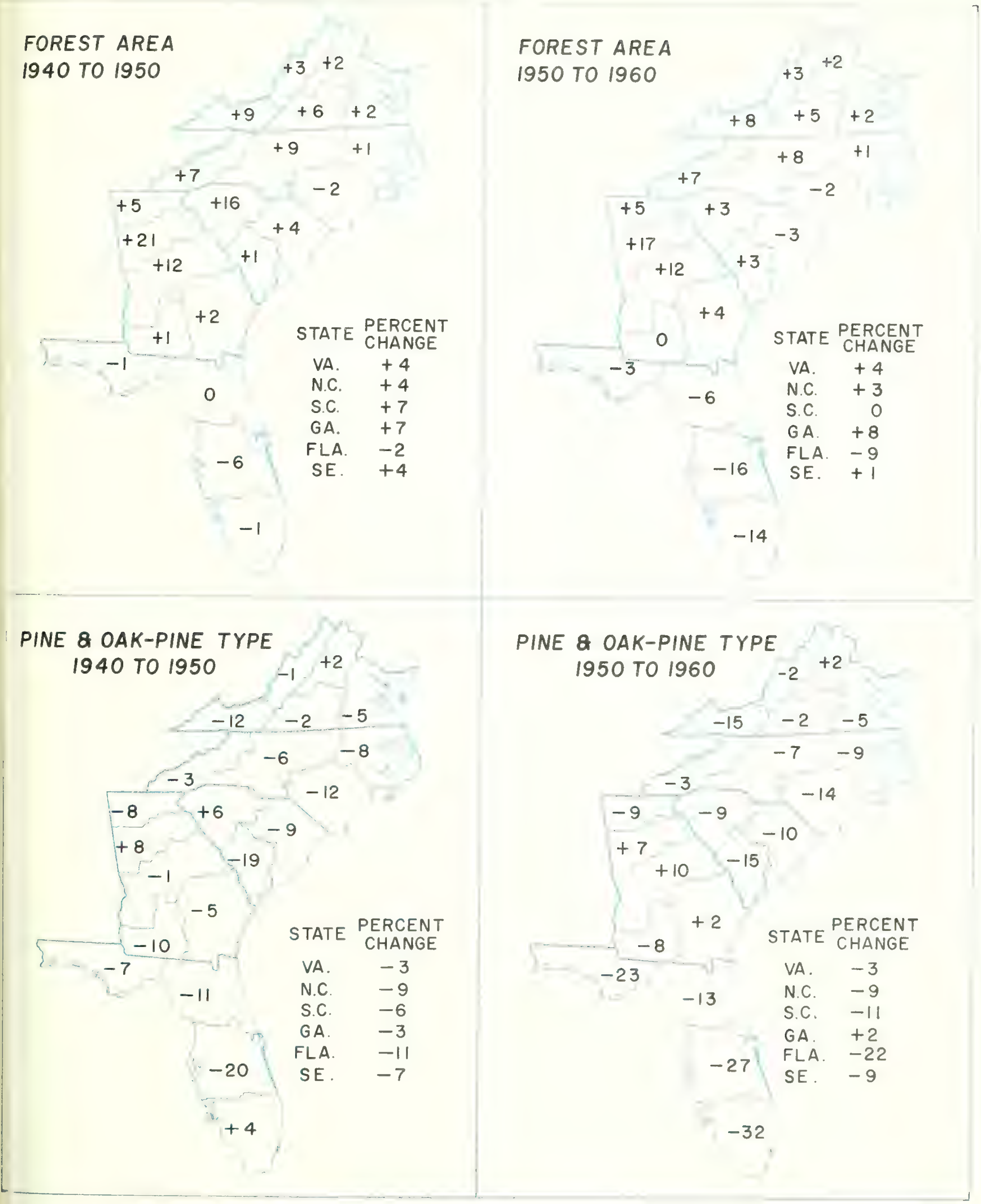
Most of the shift in forest type took place in the Coastal Plain, where, during the past 20 years, hardwoods replaced pine on 8.4 million acres--a reduction of 22 percent in pine and oak-pine type.

In the Piedmont, encroachment of hardwoods in pine stands is also active, but for most of the area reversion of abandoned cropland to pine has just about offset the shift from pine to hardwood types. During both the past and the previous 10-year periods, the area of pine and oak-pine type in the Piedmont increased 1 percent.

Area of pine and oak-pine type has decreased 12 percent in the Mountains during the past 20 years.

SLIGHT UPWARD TREND IN PINE VOLUME

During the past 20 years pine growth has exceeded the cut by a slight margin. During the past 10 years this margin has narrowed and is much smaller than the substantial surplus of growth over cut in 1952 reported by the Timber Resource Review. More recent surveys have made it increasingly apparent that the growth-cut relationship for 1952 does not accurately reflect recent trends. Thus, instead of the substantial buildup in pine volume that would have taken place had the 1952 growth-cut relationship continued, recent surveys disclose only a 1-percent increase in pine volume during the past 10 years, compared to 2 percent between 1940 and 1950 (fig. 2).



FOREST AREA 1940 TO 1950

STATE	PERCENT CHANGE
VA.	+4
N.C.	+4
S.C.	+7
GA.	+7
FLA.	-2
SE.	+4

FOREST AREA 1950 TO 1960

STATE	PERCENT CHANGE
VA.	+4
N.C.	+3
S.C.	0
GA.	+8
FLA.	-9
SE.	+1

PINE & OAK-PINE TYPE 1940 TO 1950

STATE	PERCENT CHANGE
VA.	-3
N.C.	-9
S.C.	-6
GA.	-3
FLA.	-11
SE.	-7

PINE & OAK-PINE TYPE 1950 TO 1960

STATE	PERCENT CHANGE
VA.	-3
N.C.	-9
S.C.	-11
GA.	+2
FLA.	-22
SE.	-9

Figure 1. --Percent change in commercial forest area and area of pine and oak-pine types by Forest Survey Unit in the Southeast.

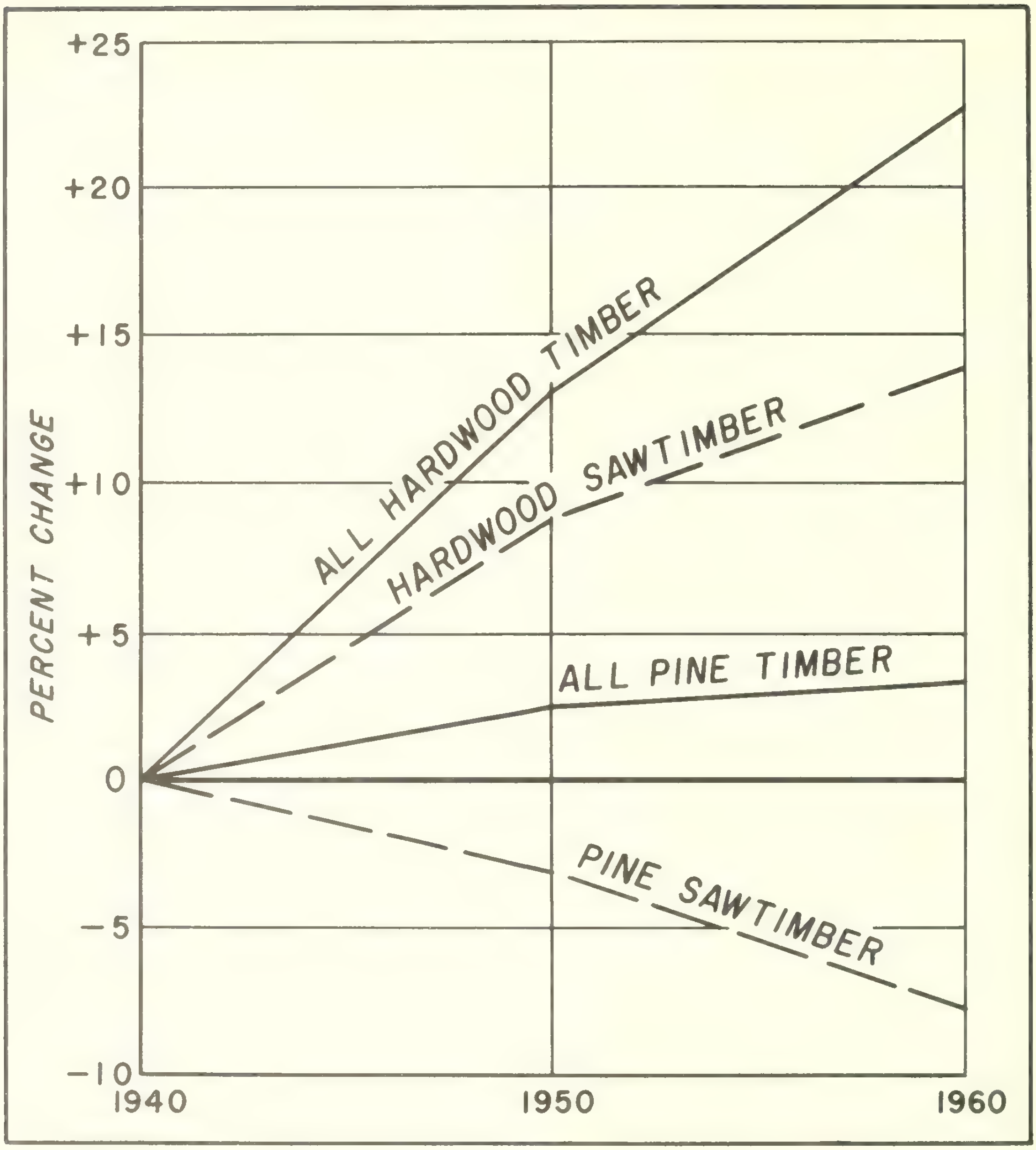
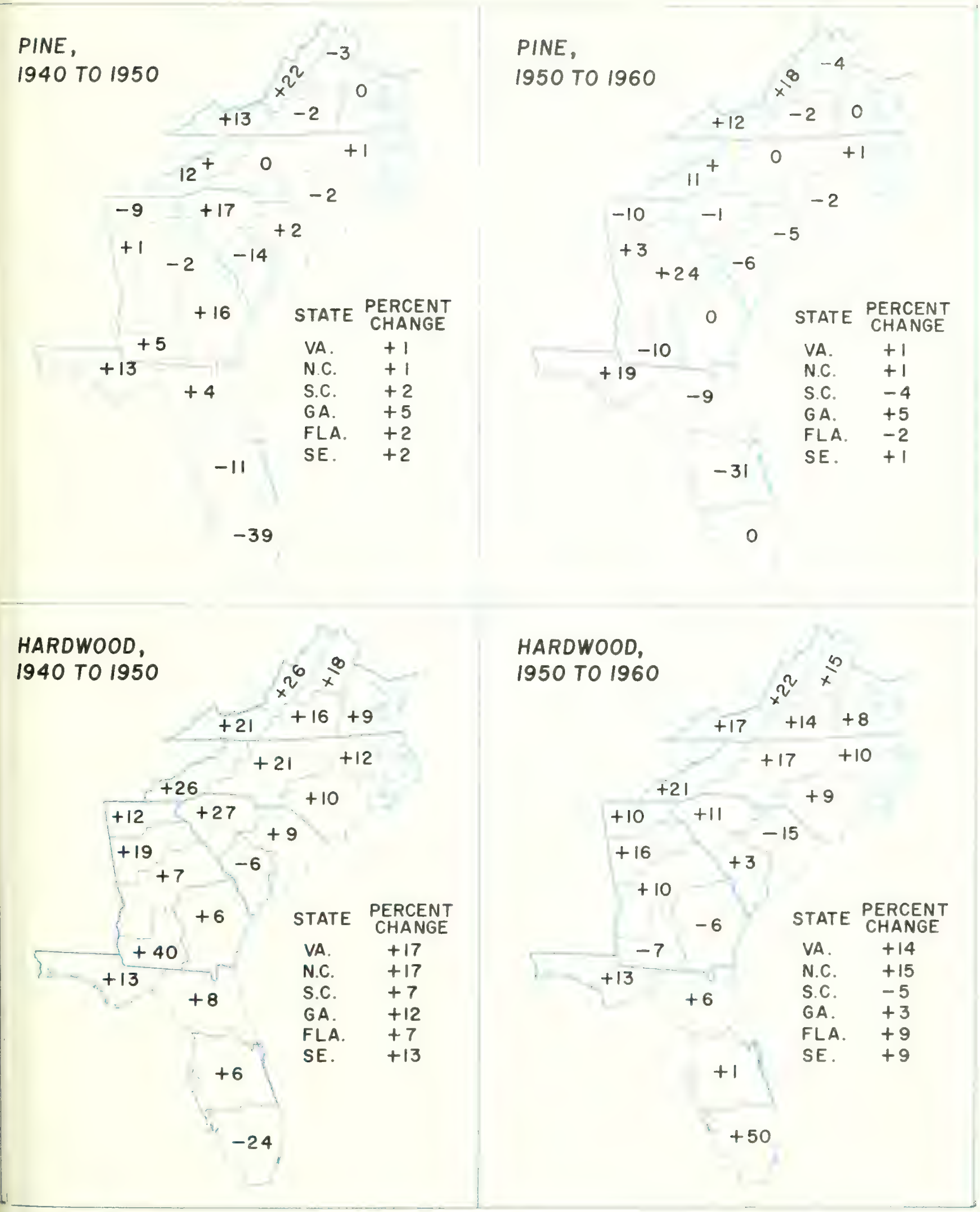


Figure 2.--Percent change in timber volume in the Southeast since 1940.

In the Coastal Plain, the upward trend in pine volume has been reversed; pine volume increased 2 percent during the first decade but decreased 2 percent during the past 10 years, In Southeast Georgia, pine volume increased 16 percent during the first decade but barely held its own during the following decade (fig. 3). In Southwest Georgia, the change in pine volume shifted from plus 5 percent during the first decade to minus 10 percent during the second. Most of the Coastal Plain units surveyed for the third time showed a less favorable growth-cut balance during the past 10 years than the previous 10 years

In the Piedmont, trends are not so clear cut; the outlook in the lower Piedmont of Georgia has improved during the past 10 years, but it was less favorable in the South Carolina Piedmont.



PINE, 1940 TO 1950

STATE	PERCENT CHANGE
VA.	+1
N.C.	+1
S.C.	+2
GA.	+5
FLA.	+2
SE.	+2

PINE, 1950 TO 1960

STATE	PERCENT CHANGE
VA.	+1
N.C.	+1
S.C.	-4
GA.	+5
FLA.	-2
SE.	+1

HARDWOOD, 1940 TO 1950

STATE	PERCENT CHANGE
VA.	+17
N.C.	+17
S.C.	+7
GA.	+12
FLA.	+7
SE.	+13

HARDWOOD, 1950 TO 1960

STATE	PERCENT CHANGE
VA.	+14
N.C.	+15
S.C.	-5
GA.	+3
FLA.	+9
SE.	+9

Figure 3. --Percent change in all timber volume by Forest Survey Unit in the Southeast.

Hardwood volume for the Southeast as a whole is continuing to increase at a rate of about one percent a year, although the rate of increase has been slightly less during the past 10 years than during the previous 10.

In contrast to an increase in hardwood volume between 1940 and 1950, hardwood volume in the Northern Coastal Plain of South Carolina and both Coastal Plain units of Georgia has decreased since 1950.

GROWTH SHORT OF REPLACING SAWTIMBER CUT

While all pine timber has increased slightly since 1940, the region in 1960 had 8 percent less sawtimber and 27 percent less large sawtimber, i. e., volume in trees 15.0 inches and larger. In 1940, 35 percent of the pine sawtimber volume was in trees 15.0 inches and larger; by 1960, this proportion had dropped to 28 percent. More than half the reduction in pine sawtimber has taken place during the past 10 years.

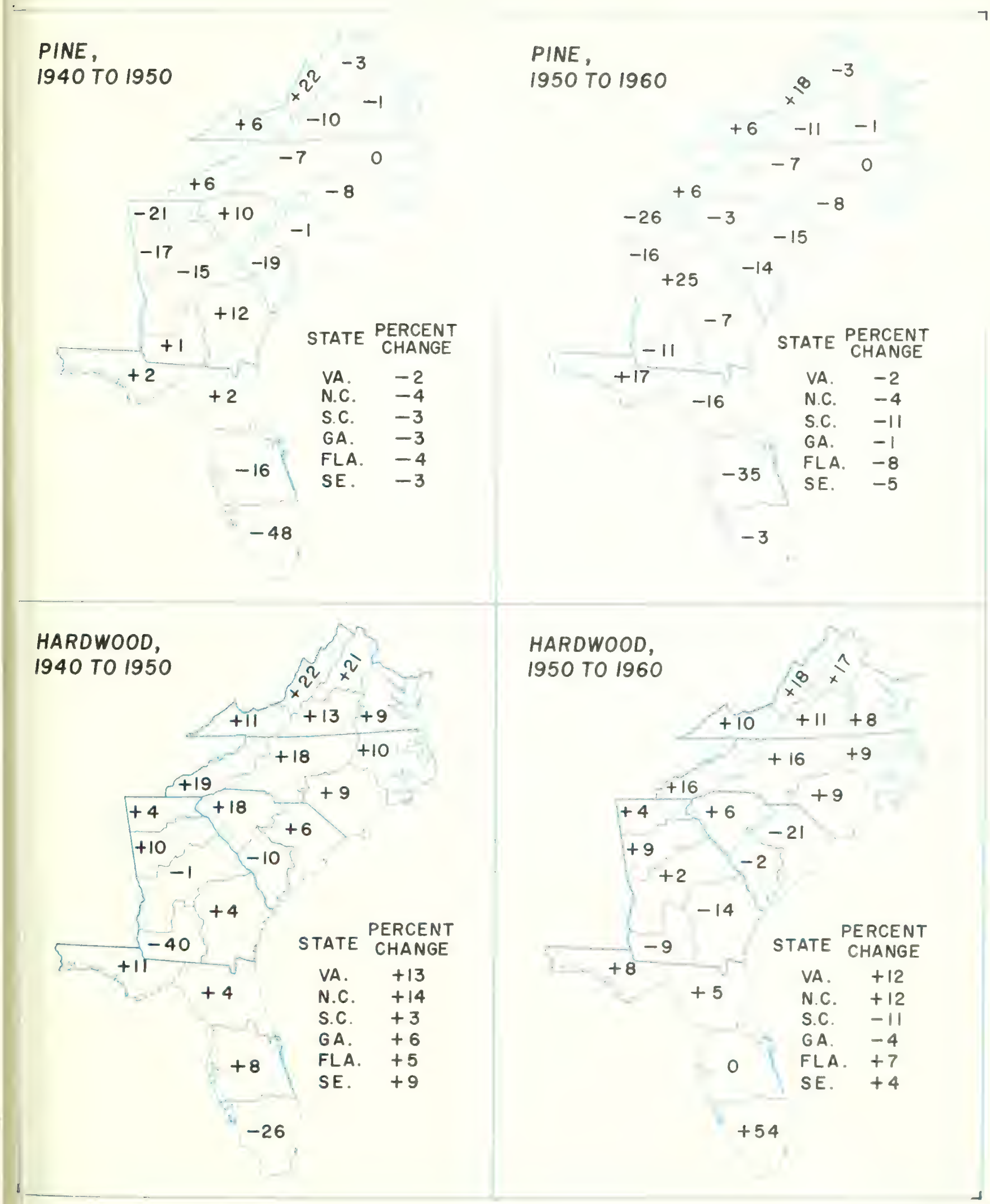
Prior to 1950, all the decrease in pine sawtimber was confined to large sawtimber; the volume of small pine sawtimber increased. But since 1950, both small and large pine sawtimber have been overcut. In the Coastal Plain and Piedmont, only Northwest Florida and the lower Piedmont of Georgia showed an increase in pine sawtimber since 1950 (fig. 4).

The third survey also disclosed a less favorable growth-cut balance for hardwood sawtimber during the past 10 years than the previous 10. Large hardwood sawtimber, which increased between 1940 and 1950, has decreased since 1950. Third surveys reveal a reduction in hardwood sawtimber in the Northern Coastal Plain of South Carolina and in both Coastal Plain units of Georgia since 1950. This is in contrast to the surplus of growth over cut between 1940 and 1950 in these areas.

THE TIMBER SUPPLY OUTLOOK

Prospective trends in forest area, timber volume, growth, and cut have far-reaching implications to forest industries in the Southeast. During the past 20 years, growth has increased but so has the cut. Regionwide, the increase in total pine growth has just about kept pace with the increase in pine cut, but in many areas pine, and especially pine sawtimber, is being cut faster than it is being replaced by growth. Prospective economic development of the region seems to assure a continued increase in timber cut, provided timber is available.

Two factors in particular have favored the increase in pine growth over the past 20 years. One has been the upward trend in forest land acreage and the other, better fire protection. Neither of these factors can be counted on, however, to increase growth so effectively in the future as in the past.



PINE, 1940 TO 1950

STATE	PERCENT CHANGE
VA.	−2
N.C.	−4
S.C.	−3
GA.	−3
FLA.	−4
SE.	−3

PINE, 1950 TO 1960

STATE	PERCENT CHANGE
VA.	−2
N.C.	−4
S.C.	−11
GA.	−1
FLA.	−8
SE.	−5

HARDWOOD, 1940 TO 1950

STATE	PERCENT CHANGE
VA.	+13
N.C.	+14
S.C.	+3
GA.	+6
FLA.	+5
SE.	+9

HARDWOOD, 1950 TO 1960

STATE	PERCENT CHANGE
VA.	+12
N.C.	+12
S.C.	−11
GA.	−4
FLA.	+7
SE.	+4

Figure 4. --Percent change in sawtimber volume by Forest Survey Unit in the Southeast.

Currently, a substantial part of the annual cut is coming from pine stands of old-field origin. The increase in pine volume in the Piedmont, in contrast to the decrease in the Coastal Plain, reflects to a large extent the wide-scale reversion of abandoned farmland to forests in this area. In the future, competing nonforest uses arising from population pressure can be expected to offset much of the reversion of nonforest land to forest. Forest area diverted to highways and urban development is on the increase. The downward trend in cropland is expected to level off, and by 2000 the conversion to agricultural use of substantial areas of land now growing timber appears a good possibility. Thus, the region's expanding forest industry faces the prospect of having to cut more and more timber from the same or less forest area.

Better fire protection has also increased pine growth. At the time of the first survey in the middle thirties, repeated burning kept millions of acres poorly stocked. Following a reduction in wild fires, openings restocked with pine where seed source and seedbed conditions were favorable. Today much less area is favorable to natural pine regeneration than 20 years ago; much of the area formerly available has become stocked with pine where conditions favored restocking, or has been taken over by shrubs and hardwoods where conditions were unfavorable. Thus, continued fire protection cannot be so effective in encouraging pine regeneration in the future as in the past.

In the future, landowners will have to depend more and more on planting to offset the prospective decline in natural pine regeneration. Currently, about 750 million pine seedlings are being distributed for planting annually in the Southeast--enough to stock about a million acres. Some 4.5 million acres are cut annually. Recent surveys indicate that half or more of the cutover area is poorly stocked and will not restock naturally. The current planting program, though greatly expanded during the past 10 years and an important step in the right direction, is still short of what is needed to restock the area cut annually. Moreover, much of the medium-stocked area is badly in need of stand improvement to release pine and better-quality hardwoods from cull trees and shrubs.

The major share of the job of getting each acre to grow more and better-quality timber will fall to private landowners not associated with forest industries. Forest industries own only 16 percent of the 92 million acres of forest land; public forests account for only 9 percent. The remaining three-fourths of the forest area is owned by hundreds of thousands of individual owners with a wide diversity of interests. In the Southeast, the largest group of owners are farmers, most of them owning woodland tracts of 100 acres or less.

As of 1961, neither trends in timber supply nor prospective demand for timber appear to warrant a relaxation of efforts to increase timber growth in the Southeast.

DEFINITION OF TERMS

Forest land: Areas of one acre or more (a) which are at least 10 percent stocked with trees including seedlings and larger of both commercial and noncommercial species, and (b) from which trees have been removed to less than 10 percent stocking but which have not been developed for other uses. Narrow strips less than 120 feet wide, even though area is an acre or more, are excluded. Also excludes areas around homes and barns that are occupied by ornamental trees or trees used for shade.

Commercial forest land: Forest land which is (a) producing or physically capable of producing trees with one sound saw log at least 8 feet long, (b) economically accessible now or in the foreseeable future, (c) not withdrawn from timber utilization, such as parks and watersheds.

Pine type: Stands with pine making up 50 percent or more of the dominant and codominant trees.

Oak-pine type: Stands with pine making up at least 25 percent but less than 50 percent of the dominant and codominant trees.

Hardwood type: Stands with pine making up less than 25 percent of the dominant and codominant trees.

All timber: All live trees.

Growing stock: Trees of commercial species that now or prospectively qualify as sawtimber.

Sawtimber trees: Softwood trees 9.0 inches d. b. h. or larger and hardwood trees 11.0 inches d. b. h. or larger of commercial species with board-foot defect not exceeding 50 percent of the gross volume in the saw-log portion. The tree must have at least one 8-foot saw log.

BASIC FOREST STATISTICS

FOR THE SOUTHEAST

Table 1.--Total land area, 1960, and commercial forest area, by major forest type, State, Survey Unit, and physiographic province, 1940, 1950, and 1960

(In thousand acres)

State and Survey Unit	Total land area 1960	Commercial forest			Pine and oak-pine types			Hardwood types		
		1940	1950	1960	1940	1950	1960	1940	1950	1960
Florida:										
1	9,547	7,560	7,559	7,124	5,411	4,833	4,225	2,149	2,726	2,899
2	7,185	5,981	5,907	5,701	4,473	4,139	3,171	1,508	1,768	2,530
3	9,639	6,021	5,655	4,733	4,773	3,802	2,759	1,248	1,853	1,974
4	7,595	2,170	2,144	1,841	1,635	1,700	1,152	535	444	689
Total	33,966	21,732	21,265	19,399	16,292	14,474	11,307	5,440	6,791	8,092
Georgia:										
1	10,590	7,446	7,597	7,927	5,906	5,603	5,689	1,540	1,994	2,238
2	5,623	3,030	3,056	3,068	2,417	2,172	1,991	613	884	1,077
3	10,507	5,858	6,549	7,332	4,292	4,332	4,775	1,566	2,217	2,557
4	6,223	2,778	3,350	3,923	2,102	2,270	2,438	676	1,080	1,485
5	4,187	2,891	3,033	3,174	1,709	1,575	1,440	1,182	1,458	1,734
Total	37,130	22,003	23,585	25,424	16,426	15,952	16,333	5,577	7,633	9,091
North Carolina:										
1	8,381	5,513	5,410	5,306	4,049	3,554	3,059	1,464	1,856	2,247
2	6,776	4,062	4,114	4,166	2,735	2,506	2,276	1,327	1,608	1,890
3	10,542	5,103	5,552	6,000	3,494	3,280	3,065	1,609	2,272	2,935
4	5,653	3,597	3,859	4,123	1,074	1,041	1,009	2,523	2,818	3,114
Total	31,352	18,275	18,935	19,595	11,352	10,381	9,409	6,923	8,554	10,186
South Carolina:										
1	5,111	3,008	3,050	3,129	1,926	1,558	1,328	1,082	1,492	1,801
2	7,406	4,628	4,807	4,644	2,902	2,627	2,366	1,726	2,130	2,278
3	6,686	3,490	4,055	4,170	2,740	2,911	2,638	750	1,144	1,532
Total	19,203	11,126	11,912	11,943	7,568	7,096	6,332	3,558	4,816	5,611
Virginia:										
1	6,284	3,919	4,012	4,104	2,414	2,299	2,184	1,505	1,713	1,920
2	5,597	3,422	3,613	3,804	1,849	1,806	1,763	1,573	1,807	2,041
3	4,427	2,406	2,457	2,508	908	924	940	1,498	1,533	1,568
4	4,299	2,273	2,347	2,420	613	604	594	1,660	1,743	1,826
5	4,795	2,392	2,600	2,807	446	390	333	1,946	2,210	2,474
Total	25,402	14,412	15,029	15,643	6,230	6,023	5,814	8,182	9,006	9,829
Coastal Plain	84,137	53,338	53,311	51,743	38,641	34,793	30,200	14,697	18,518	21,543
Piedmont	43,982	23,057	25,576	27,737	15,385	15,523	15,619	7,672	10,053	12,118
Mountains	18,934	11,153	11,839	12,524	3,842	3,610	3,376	7,311	8,229	9,148
Southeast	147,053	87,543	90,726	92,004	57,868	53,926	49,195	29,680	36,800	42,809

Table 2.--Net all-timber volume for pine and hardwood[1] by State, Survey Unit, and physiographic province, 1940, 1950, and 1960

(In million cubic feet)

State and Survey Unit	All timber			Pine			Hardwood		
	1940	1950	1960	1940	1950	1960	1940	1950	1960
Florida:									
1	3,686	3,929	3,913	1,628	1,699	1,548	2,058	2,230	2,365
2	2,408	2,720	3,140	986	1,112	1,322	1,422	1,608	1,818
3	1,560	1,563	1,436	515	459	318	1,045	1,104	1,118
4	491	346	462	190	116	116	301	230	346
Total	8,145	8,558	8,951	3,319	3,386	3,304	4,826	5,172	5,647
Georgia:									
1	5,536	6,133	5,977	2,798	3,235	3,247	2,738	2,898	2,730
2	1,865	2,220	2,031	1,102	1,154	1,040	763	1,066	991
3	4,654	4,769	5,561	2,331	2,279	2,824	2,323	2,490	2,737
4	1,812	1,982	2,176	986	996	1,029	826	986	1,147
5	1,966	2,027	2,105	746	663	598	1,220	1,364	1,507
Total	15,833	17,131	17,850	7,963	8,327	8,738	7,870	8,804	9,112
North Carolina:									
1	3,929	4,078	4,227	2,024	1,978	1,932	1,905	2,100	2,295
2	4,956	5,276	5,603	2,371	2,393	2,423	2,585	2,883	3,180
3	4,986	5,483	5,980	2,608	2,617	2,628	2,378	2,866	3,352
4	2,928	3,598	4,267	708	796	884	2,220	2,802	3,383
Total	16,799	18,435	20,077	7,711	7,784	7,867	9,088	10,651	12,210
South Carolina:									
1	2,895	2,624	2,604	1,126	964	902	1,769	1,660	1,702
2	4,673	4,949	4,383	1,853	1,885	1,786	2,820	3,064	2,597
3	2,423	2,945	3,069	1,357	1,594	1,575	1,066	1,351	1,494
Total	9,991	10,518	10,056	4,336	4,443	4,263	5,655	6,075	5,793
Virginia:									
1	4,758	4,987	5,216	2,242	2,245	2,248	2,516	2,742	2,968
2	2,798	3,036	3,273	1,174	1,152	1,130	1,624	1,884	2,143
3	1,883	2,114	2,343	528	512	494	1,355	1,602	1,849
4	1,528	1,911	2,311	254	310	365	1,274	1,601	1,946
5	1,669	2,003	2,337	184	208	232	1,485	1,795	2,105
Total	12,636	14,051	15,480	4,382	4,427	4,469	8,254	9,624	11,011
Coastal Plain	36,757	38,825	38,992	16,835	17,240	16,882	19,922	21,585	22,110
Piedmont	18,556	20,329	22,402	8,984	9,150	9,680	9,572	11,179	12,722
Mountains	8,091	9,539	11,020	1,892	1,977	2,079	6,199	7,562	8,941
Southeast	63,404	68,693	72,414	27,711	28,367	28,641	35,693	40,326	43,773

---

[1] **Includes cypress.**

Table 3.--Net sawtimber volume of pine and hardwood by State, Survey Unit, and physiographic province, 1940, 1950, and 1960

(In million board feet)

State and Survey Unit	Total sawtimber			Pine						Hardwood[1]					
				Total sawtimber			Large sawtimber			Total sawtimber			Large sawtimber		
	1940	1950	1960	1940	1950	1960	1940	1950	1960	1940	1950	1960	1940	1950	1960
Florida:															
1	10,079	10,364	9,657	5,575	5,681	4,760	1,144	774	672	4,504	4,683	4,897	2,422	2,321	2,355
2	6,395	6,776	7,602	3,324	3,380	3,950	1,033	746	794	3,071	3,396	3,652	1,916	2,135	2,178
3	3,664	3,549	3,046	1,728	1,450	946	388	205	176	1,936	2,099	2,100	847	1,028	963
4	1,329	822	1,044	749	392	382	253	76	47	580	430	662	219	138	244
Total	21,467	21,511	21,349	11,376	10,903	10,038	2,818	1,801	1,689	10,091	10,608	11,311	5,404	5,622	5,740
Georgia:															
1	15,937	17,330	15,678	9,185	10,310	9,611	2,596	2,220	1,879	6,752	7,020	6,067	3,997	3,992	3,153
2	5,707	6,388	5,722	4,155	4,217	3,743	1,469	1,254	1,156	1,552	2,171	1,979	808	1,100	931
3	13,967	12,732	14,485	7,732	6,543	8,156	3,097	1,675	2,089	6,235	6,189	6,329	3,774	3,369	3,108
4	3,802	3,602	3,472	2,190	1,822	1,524	732	377	92	1,612	1,780	1,948	995	1,025	1,055
5	4,295	3,965	3,637	2,055	1,628	1,205	688	467	249	2,240	2,337	2,432	1,287	1,262	1,236
Total	43,708	44,017	42,994	25,317	24,520	24,239	8,582	5,993	5,465	18,391	19,497	18,755	10,861	10,748	9,483
North Carolina:															
1	12,632	12,513	12,412	7,516	6,925	6,338	2,638	2,180	1,730	5,116	5,588	6,074	3,052	3,224	3,405
2	15,345	15,974	16,618	9,129	9,133	9,156	3,581	3,476	3,380	6,216	6,841	7,462	3,718	3,983	4,242
3	12,702	13,170	13,657	7,323	6,810	6,302	1,886	1,574	1,273	5,379	6,360	7,355	2,844	3,291	3,752
4	7,093	8,149	9,205	2,227	2,369	2,512	1,092	1,170	1,248	4,866	5,780	6,693	2,980	3,425	3,869
Total	47,772	49,806	51,892	26,195	25,237	24,308	9,197	8,400	7,631	21,577	24,569	27,584	12,594	13,923	15,268
South Carolina:															
1	8,846	7,610	7,038	4,256	3,460	2,985	2,335	1,712	1,268	4,590	4,150	4,053	2,859	2,395	2,184
2	14,587	14,963	12,277	7,090	6,993	5,950	3,652	3,414	2,699	7,497	7,970	6,327	5,071	5,215	3,888
3	5,841	6,623	6,644	3,623	4,000	3,870	1,162	1,145	1,180	2,218	2,623	2,774	1,377	1,505	1,494
Total	29,274	29,196	25,959	14,969	14,453	12,805	7,149	6,271	5,147	14,305	14,743	13,154	9,307	9,115	7,566
Virginia:															
1	14,316	14,807	15,296	7,553	7,458	7,360	2,664	2,366	2,067	6,763	7,349	7,936	4,024	4,245	4,466
2	6,030	6,217	6,405	2,544	2,281	2,019	463	406	349	3,486	3,936	4,386	1,920	1,985	2,051
3	3,881	4,473	5,063	909	883	857	124	94	63	2,972	3,590	4,206	1,661	1,946	2,230
4	2,882	3,523	4,165	620	759	899	323	374	425	2,262	2,764	3,266	1,331	1,522	1,713
5	3,569	3,945	4,324	546	580	614	293	295	297	3,023	3,365	3,710	1,954	2,015	2,080
Total	30,678	32,965	35,253	12,172	11,961	11,749	3,867	3,535	3,201	18,506	21,004	23,504	10,890	11,713	12,540
Coastal Plain	108,837	111,096	106,390	60,260	59,399	55,181	21,753	18,423	15,868	48,577	51,697	51,209	28,933	29,776	28,009
Piedmont	46,223	46,817	49,726	24,321	22,339	22,728	7,464	5,271	5,046	21,902	24,478	26,998	12,571	13,121	13,690
Mountains	17,839	19,582	21,331	5,448	5,336	5,230	2,396	2,306	2,219	12,391	14,246	16,101	7,552	8,224	8,898
Southeast	172,899	177,495	177,447	90,029	87,074	83,139	31,613	26,000	23,133	82,870	90,421	94,308	49,056	51,121	50,597

[1] Includes cypress.

Table 4.--Pine and hardwood pulpwood production, by State and Survey Unit, 1950 to 1960

(In thousand cords)

State and Survey Unit	1950		1951		1952		1953		1954		1955		1956		1957		1958		1959		1960	
	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.
Florida:																						
1	843	--	905	1	1,000	1	987	--	1,050	--	1,128	1	1,221	1	1,202	23	1,092	54	1,217	68	1,160	70
2	386	--	381	--	362	1	424	4	377	--	487	--	483	--	509	3	422	7	502	28	495	29
3	141	--	178	--	177	--	212	--	184	--	182	--	219	--	183	--	143	1	125	1	121	--
4	14	--	25	--	42	--	48	--	50	--	30	--	27	--	28	--	34	--	39	--	49	--
Total	1,384	--	1,489	1	1,581	2	1,671	4	1,661	--	1,827	1	1,950	1	1,922	26	1,691	62	1,883	97	1,825	99
Georgia:																						
1	1,017	81	1,075	66	1,170	71	1,389	83	1,518	124	1,953	149	1,705	148	1,486	181	1,477	188	1,641	211	1,609	252
2	335	1	369	5	343	25	332	36	413	40	495	29	496	23	435	25	361	40	406	34	457	30
3	525	2	519	2	522	5	594	2	596	3	656	4	827	8	891	17	981	28	1,214	61	1,160	76
4	218	--	262	1	310	1	357	1	290	3	363	2	488	1	561	--	603	7	589	14	598	25
5	26	5	54	4	56	4	77	2	63	3	102	3	149	5	170	7	161	14	159	25	181	22
Total	2,121	89	2,279	78	2,401	106	2,749	124	2,880	173	3,569	187	3,665	185	3,543	230	3,583	277	4,009	345	4,005	405
North Carolina:																						
1	302	12	418	28	396	33	447	47	422	61	440	47	539	45	537	68	499	70	522	82	518	92
2	179	8	217	19	183	12	218	24	280	24	284	32	294	26	275	38	289	48	365	62	389	78
3	174	11	275	22	309	29	438	34	383	38	396	45	507	43	482	49	418	62	421	96	427	78
4	135	112	144	111	197	144	160	141	144	156	153	173	172	216	143	171	137	183	121	165	152	154
Total	790	143	1,054	180	1,085	218	1,263	246	1,229	279	1,273	297	1,512	330	1,437	326	1,343	363	1,429	405	1,486	402
South Carolina:																						
1	256	31	221	43	162	40	186	47	205	52	244	77	275	63	250	75	261	60	268	91	405	87
2	471	65	438	70	425	73	429	101	412	103	423	142	449	136	430	160	430	162	378	201	417	203
3	342	17	446	33	545	30	658	25	543	15	602	26	859	25	705	35	655	24	696	76	693	97
Total	1,069	113	1,105	146	1,132	143	1,273	173	1,160	170	1,269	245	1,583	224	1,385	270	1,346	246	1,342	368	1,515	387
Virginia:																						
1	389	11	383	23	278	20	335	18	395	20	457	36	402	50	355	50	342	99	511	87	508	89
2	265	78	435	99	374	83	451	79	398	62	418	72	519	92	421	72	382	61	431	80	446	84
3	86	60	112	70	137	42	186	54	180	43	184	38	254	57	221	53	179	55	206	54	226	65
4	31	89	38	102	38	68	52	74	51	86	69	110	82	137	72	141	73	157	82	156	81	164
5	4	12	21	18	4	15	10	8	10	14	10	9	16	20	11	22	6	24	12	25	17	35
Total	775	250	989	312	831	228	1,034	233	1,034	225	1,138	265	1,273	356	1,080	338	982	396	1,242	402	1,278	437
Coastal Plain	4,333	209	4,610	255	4,538	276	5,007	360	5,306	424	6,123	513	6,110	492	5,690	623	5,350	729	5,974	865	6,128	930
Piedmont	1,610	168	2,049	227	2,197	190	2,684	195	2,390	164	2,619	187	3,454	226	3,281	226	3,218	237	3,557	381	3,550	425
Mountains	196	218	257	235	295	231	299	225	268	259	334	295	419	378	396	341	377	378	374	371	431	375
Southeast	6,139	595	6,916	717	7,030	697	7,990	780	7,964	847	9,076	995	9,983	1,096	9,367	1,190	8,945	1,344	9,905	1,617	10,109	1,730

Table 5.--Softwood and hardwood lumber production, by State, 1950 to 1959[1]

(In million board feet)

State	1950		1951		1952		1953		1954	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Florida	518	83	518	74	525	33	457	51	364	51
Georgia	1,671	346	1,730	447	1,741	341	1,540	323	1,309	362
North Carolina	1,510	483	1,418	604	1,310	430	1,300	465	1,259	448
South Carolina	720	232	678	235	722	236	705	216	626	191
Virginia	983	574	816	613	670	518	642	576	740	511
Southeast	5,402	1,718	5,160	1,973	4,968	1,558	4,644	1,631	4,298	1,563

State	1955		1956		1957		1958		1959	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Florida	434	50	422	50	410	49	226	47	387	48
Georgia	1,404	404	1,418	348	1,146	264	985	222	1,198	300
North Carolina	1,336	444	1,408	501	1,346	494	1,043	371	1,134	478
South Carolina	621	201	628	199	533	176	502	174	536	169
Virginia	662	593	730	631	616	649	620	456	660	686
Southeast	4,457	1,692	4,606	1,729	4,051	1,632	3,376	1,270	3,915	1,681

---

[1] Source: U. S. Bureau of the Census.

Table 6.--Commercial forest area by ownership, 1960

(In thousand acres)

State and Survey Unit	Public	Forest industry	Private farm	Other private	Total
Florida:					
1	589	2,519	1,278	2,738	7,124
2	1,236	1,869	1,012	1,584	5,701
3	271	94	2,457	1,911	4,733
4	122	0	553	1,166	1,841
Total	2,218	4,482	5,300	7,399	19,399
Georgia:					
1	641	1,927	3,983	1,376	7,927
2	38	200	2,565	265	3,068
3	410	1,049	4,613	1,260	7,332
4	29	267	3,489	138	3,923
5	677	376	1,928	193	3,174
Total	1,795	3,819	16,578	3,232	25,424
North Carolina:					
1	455	989	3,396	466	5,306
2	94	1,115	2,431	526	4,166
3	98	429	5,271	202	6,000
4	972	519	2,388	244	4,123
Total	1,619	3,052	13,486	1,438	19,595
South Carolina:					
1	172	525	1,942	490	3,129
2	469	769	2,470	936	4,644
3	393	378	2,423	976	4,170
Total	1,034	1,672	6,835	2,402	11,943
Virginia:					
1	116	766	2,840	382	4,104
2	127	306	2,992	379	3,804
3	112	141	1,783	472	2,508
4	831	4	1,105	480	2,420
5	341	36	1,502	928	2,807
Total	1,527	1,253	10,222	2,641	15,643
			SUMMARY		
Coastal Plain	4,203	10,773	24,927	11,840	51,743
Piedmont	1,169	2,570	20,571	3,427	27,737
Mountains	2,821	935	6,923	1,845	12,524
Southeast	8,193	14,278	52,421	17,112	92,004

SOUTHERN PULPWOOD PRODUCTION, 1961

CLEMSON COLLEGE LIBRARY
SEP 25 1962
AGRI. REF. DEPT.

In this report:

Page

SOUTHERN PULPWOOD PRODUCTION—
—Roundwood
—species group 1,2
—territory, State, and survey unit 1,2,11,14
—county 2,4,5,14-24
—Residues
—species group 10
—type 2,10
—territory and State 1,2,11,14
—pine vs. hardwood chips 7,8

MILL PROCUREMENT BY—
—distance to mill 2,3
—county patterns 3,5,6,7
—hardwood pulping process 2

PULPMILLS USING SOUTHERN WOOD—
—process, capacity, and location 3,9,25,26

MAP OF SOUTHERN COUNTIES AND FOREST SURVEY UNITS 12,13

Cover photo by Thomas L. Williams

Frontispiece photo courtesy of International Paper Company

SOUTHERN PULPWOOD PRODUCTION, 1961

Vernon L. Robinson
and
Agnes C. Nichols

SOUTHEASTERN FOREST EXPERIMENT STATION
Asheville, North Carolina
and
SOUTHERN FOREST EXPERIMENT STATION
New Orleans, Louisiana
of the
Forest Service, U. S. Department of Agriculture
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
Atlanta, Georgia

1962

Southern pulpwood production reached 24,230,728 cords in 1961—60 percent of the Nation's total. Significant increases were noted in the consumption of hardwood and residues. But pine roundwood remained virtually unchanged for the third consecutive year.

Gains in 9 of the 12 southern States raised pulpwood output 3 percent above 1960 levels. They varied from a negligible amount in Virginia to a 16-percent gain in Tennessee. Production in three States—Louisiana, Mississippi, and Oklahoma—declined. Georgia harvested over 4.9 million cords to remain the South's leading producer. Alabama was second with 3.3 million cords, followed by North Carolina, South Carolina, and Florida, each producing over two million cords (table A).

Roundwood Production

Some 20,919,012 cords were delivered to the mills as roundwood (bolts cut from standing timber, as contrasted with sawmill chips, veneer cores, or other wood residues used for pulp). Nearly 80 percent of this roundwood was southern pine (table B), which has traditionally dominated the South's pulpwood market. But its share in the swelling pulpwood market has declined from a high of 90 percent of the total in 1949 to 68 percent in 1961. The output of round pine peaked in 1956 at 16.9 million cords. For 2 years during the 1957-58 recession, the harvest of pine declined. Then in 1959, it rose to 16.5 million cords, where it has remained for the past 3 consecutive years. Apparently the demand for pine roundwood has been softened by the rapid rise in chip use.

Table A. *Pulpwood production in the South, 1961, and change since 1960*

State	Round pulpwood and residues	Change
	Thousand cords	*Percent*
Alabama	3,300.4	+ 9
Arkansas	1,642.8	+ 6
Florida	2,265.4	+ 8
Georgia	4,949.1	+ 1
Louisiana	1,837.5	− 1
Mississippi	1,918.8	− 3
North Carolina	2,291.9	+ 1
Oklahoma	40.4	−24
South Carolina	2,290.7	+ 5
Tennessee	418.5	+16
Texas	1,441.5	+ 1
Virginia	1,833.7	(1)
All states	24,230.7	+ 3

[1] Negligible.

Table B. *Round pulpwood production in the South, by State and species group, 1961*

State	All species	Pine	Soft hardwoods [1]	Hard hardwoods
	Thousand cords			
Alabama	2,805.6	2,168.9	524.7	112.0
Arkansas	1,235.8	987.0	201.5	47.3
Florida	2,058.8	1,954.4	90.4	14.0
Georgia	4,406.0	3,923.9	375.5	106.6
Louisiana	1,630.3	1,306.2	231.0	93.1
Mississippi	1,718.9	889.4	730.3	99.2
North Carolina	1,879.9	1,430.4	222.0	227.5
Oklahoma	22.5	13.3	3.4	5.8
South Carolina	1,964.7	1,535.7	338.1	90.9
Tennessee	403.8	214.8	42.6	146.4
Texas	1,130.5	906.9	199.7	23.9
Virginia	1,662.2	1,190.0	119.9	352.3
All states	20,919.0	16,520.9	3,079.1	1,319.0

[1] Includes gums, cottonwood, willow, yellow-poplar, bay, magnolia, maples, basswood, sycamore, soft elm, hackberry.

At the same time, the harvest of hardwood has been steadily expanding. The production of 4,398,105 cords in 1961 was up 7 percent over 1960 (table 1) and 17 percent above 1959. A decade ago, hardwood bolt production was largely confined to central Virginia, western North Carolina, and southern Mississippi. Since then, the number of mills using hardwood bolts has increased from 34 to 64, and the number of southern counties producing hardwoods has jumped from 544 to 720. The production gains registered by Alabama and Georgia are the most noticeable. Ten years ago they produced less hardwood for pulp than all other southern States except three. Now they rank second and third in hardwood production.

Technological advances in hardwood pulping processes have aided this trend. Semichemical, groundwood, and other mechanical processes account for 10,956 tons of capacity—21 percent of the South's total. But increased pulping of hardwoods by the sulfate process is the most significant advance of recent years. For instance, in 1961, mills exclusively using the sulfate process received a third of the hardwood delivered to southern mills (table C). Of the 33 mills in this category 27 pulped hardwoods, and their hardwood receipts ranged from 1 to 48 percent of all wood received, with an average of 14 percent.

Southern pulpmills show a distinct preference for the soft-textured hardwoods such as the gums and yellow-poplar (table B). This is particularly true of mills using only the sulfate process (table C). However, use of the hard-textured species has been rising at a slightly faster pace than that of soft hardwoods for the past several years.

Table C. *Hardwood receipts at southern mills, 1961* [1]

Process at mill	Capacity	All hardwoods [2]	Soft hardwoods	Hard hardwoods
	Tons per day		– – *Percent* – –	
Sulfate	23,830	33	38	19
Sulfate and semichemical	14,115	31	26	44
Sulfate and groundwood	6,055	5	10	—
Groundwood	2,364	14	18	4
Semichemical	2,142	12	5	23
Other	2,650	5	3	10
Total	51,156	100	100	100

[1] Based on 74 percent of the hardwood delivered to southern mills.

[2] Includes wood residues.

Production by County

County patterns of round pulpwood production are shown in figures 1 and 2. Union County, Louisiana, led in the harvest of pine with 136,897 cords. Seven other counties cut more than 100,000 cords in 1961. They were Baldwin County, Alabama; Camden, Clinch, Ware, and Wayne Counties, Georgia; Winn County, Louisiana; and Fairfield County, South Carolina. Twenty-two counties harvested between 75,000 and 100,000 cords, and 41 others were in the 50,000 to 75,000 class. These 71 counties accounted for 32 percent of all the pine roundwood produced in the South during 1961.

Choctaw County, Alabama, led in the harvest of hardwood, with 74,729 cords. Wilcox County, Alabama, was the only other southern county producing more than 50,000 cords of hardwoods in 1961.

Changing Mill Procurement Patterns

When the number of mills procuring pine roundwood by county (fig. 3) is compared to previous years, a changing pattern becomes apparent. There are now fewer counties from which a large number of mills are drawing pine. This reflects a shrinking in size of mill procurement territories. Southern pulpmills expanded their pine procurement territories throughout most of the past decade (table D). In 1958, 31 percent of the pine roundwood produced was transported over 100 miles to the mill. As the mills extended their purchases, the number of counties from which seven or more mills drew pine rose from 57 in 1951 to 146 in 1959 (table E). Then, in 1960, the mills began drawing in their procurement territories

Table D. *Southern pulpwood receipts by airline distance to mill, 1951, 1956, and 1961*

Distance to mill (Miles)	Pine			Hardwood		
	1951	1956	1961	1951	1956	1961
			– – – *Cumulated percent* – – –			
All distances	100	100	100	100	100	100
50 or more	60	59	50	42	30	36
100 or more	26	28	21	10	9	10
200 or more	2	2	1	0	(2)	1

[1] Based on sample of 43 mills representing 71, 63, and 5 percent of the pine roundwood produced in the 3 years, and 46, 53, and 52 percent of the hardwood roundwood.

[2] Less than 0.5 percent.

Table E. *Number of southern counties by the number of pulp companies procuring pine roundwood, 1956-1961*

Pulp companies (Number)	1956	1957	1958	1959	1960	1961
			Cumulated number of counties			
1 or more	777	786	771	772	772	780
4 or more	417	414	402	404	383	356
7 or more	109	130	131	146	100	84
10 or more	11	28	28	29	13	11

and a sharp break occurred in the number of counties from which seven or more mills drew pine. By 1961, only 21 percent of the round pine was transported over 100 miles to the mill. Apparently, the mills have been cutting transportation costs by shortening the length of haul on pine roundwood.

In contrast to pine, the number of counties from which four or more mills drew hardwood has rapidly expanded (fig. 4), especially during the past 5 years (table F). However, the distance hardwood is transported to the mill has not increased proportionately (table D). The per-county increase in number of mills procuring hardwoods is largely accounted for by mills that began using hardwoods for the first time. For the most part, their individual volumes of purchases were small and restricted to local areas. It is only as consumption of hardwoods increases that mills reach farther out.

Table F. *Number of southern counties by the number of pulp companies procuring hardwood roundwood, 1951, 1956, 1961*

Pulp companies (Number)	1951	1956	1961
	Cumulated number of counties		
1 or more	544	606	720
4 or more	43	50	120
7 or more	5	0	6
10 or more	0	0	0

Residues

Wood residue production totaled 3,311,716 cord equivalents in 1961—a 12-percent gain over 1960 (table 2). Residues now account for 14 percent of all pulpwood produced in the South. Georgia remains the leading producer, with 543,076 cords. Alabama, Arkansas, and North Carolina produced more than 400,000 cords each.

Ninety-eight percent of this material was chips from sawmill and veneer plant waste; the remainder consisted of veneer cores, cull crossties, pole and piling ends, and other coarse residues (table 3). Pine chip production reached 2.8 million cords in 1961—85 percent of all residues received at the mills. However, the rapid growth in pine chip production has slowed considerably during the past 2 years (fig. 5). The 1961 production gain was less than half that of earlier years. Hardwood chip production, on the other hand, has been growing at an accelerated pace since 1959.

Pine chip production has followed a normal growth curve and is now apparently reaching the limit of economic supply. A large source of unused residue remains at small sawmills, but to tap this resource would require development of specialized equipment and methods of handling.

Capacity

The construction of 24 new mills and expansion of existing ones more than doubled the South's pulp capacity during the past decade. In the past 5 years alone, plant capacity increased by a third. The South now has 81 mills with 51,156 tons of daily capacity (table 18). One new mill went into operation during 1961 and several minor expansion programs were carried out. The 1960-61 increment in plant capacity was the smallest in any single year since at least 1946.

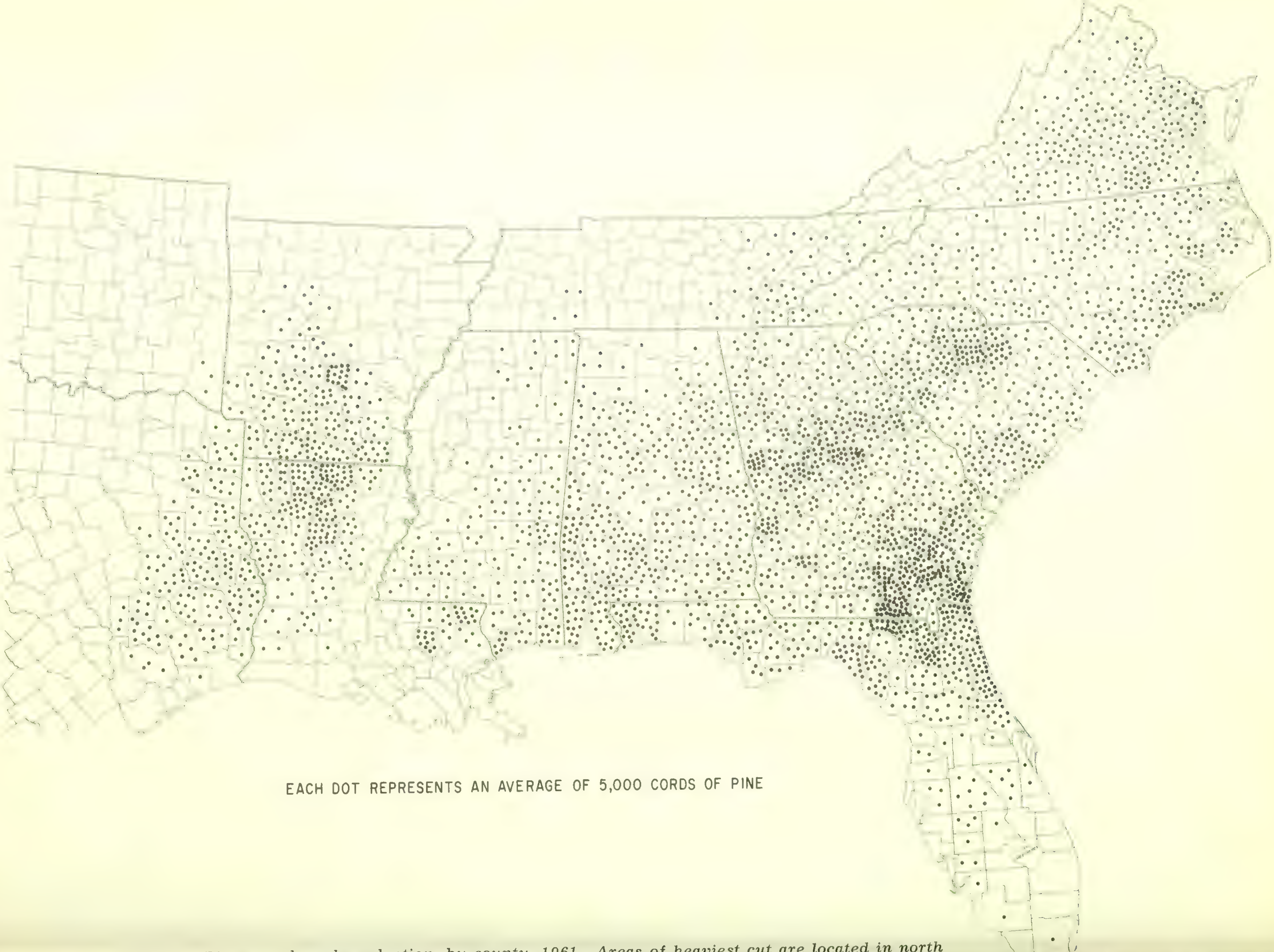


Figure 1.—Pine roundwood production by county, 1961. Areas of heaviest cut are located in north

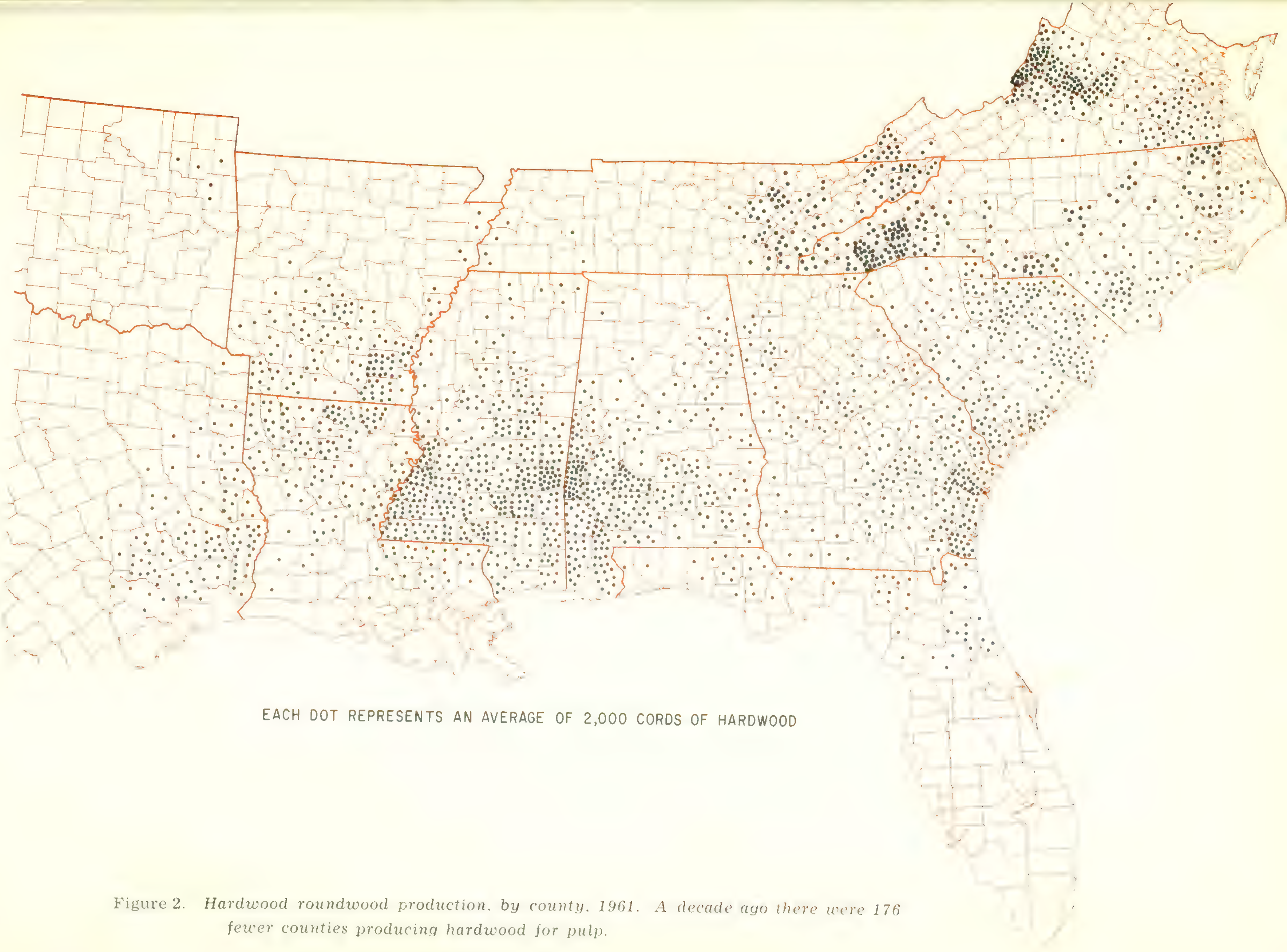
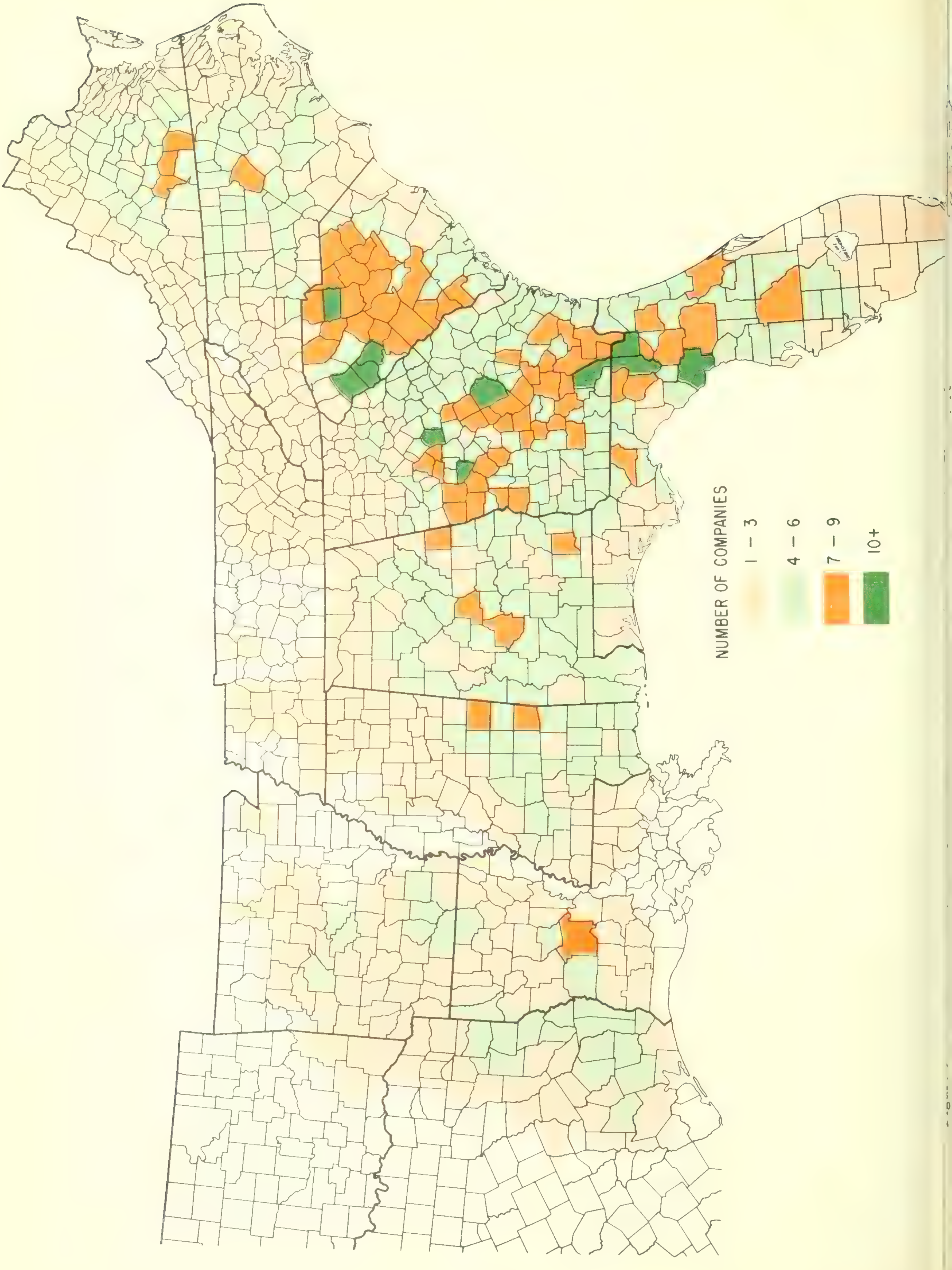


Figure 2. *Hardwood roundwood production, by county, 1961. A decade ago there were 176 fewer counties producing hardwood for pulp.*


NUMBER OF COMPANIES
1 – 3
4 – 6
7 – 9
10+

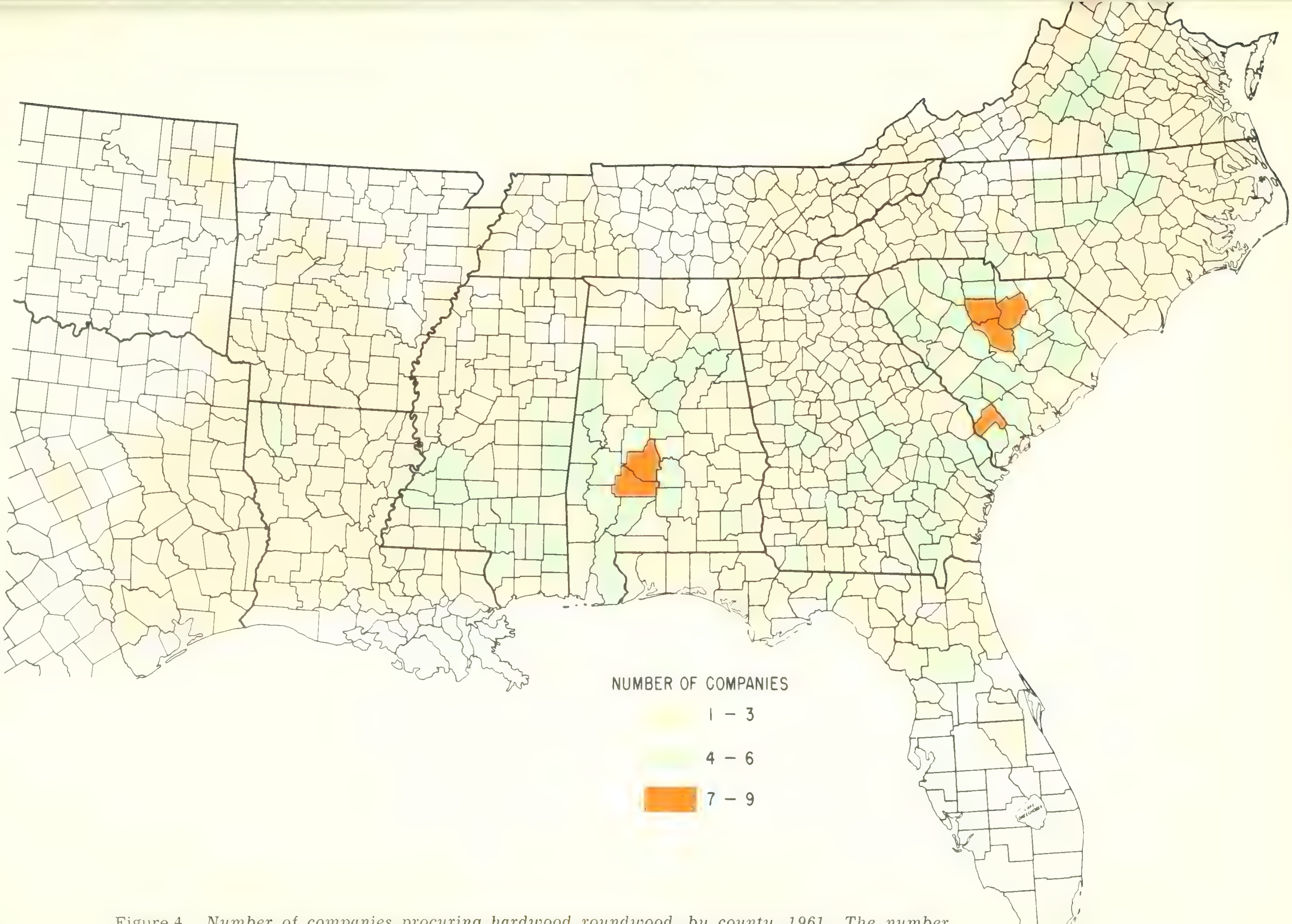
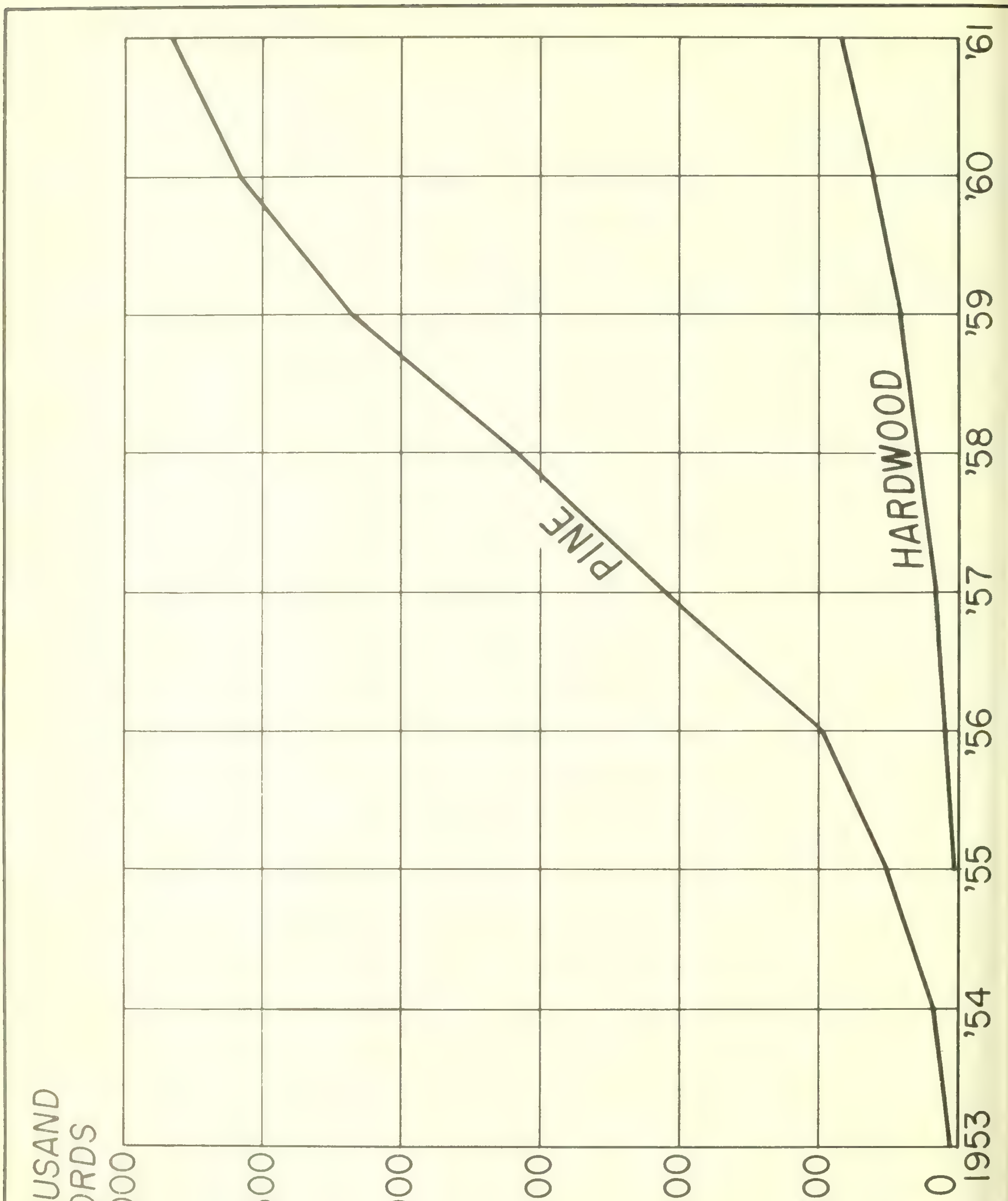


Figure 4. *Number of companies procuring hardwood roundwood, by county, 1961. The number of counties from which four or more mills draw hardwood is increasing.*


THOUSAND CORDS
3,000
2,500
2,000
1,500
1,000
500
0
1953
'54
'55
'56
'57
'58
'59
'60
'61
PINE
HARDWOOD

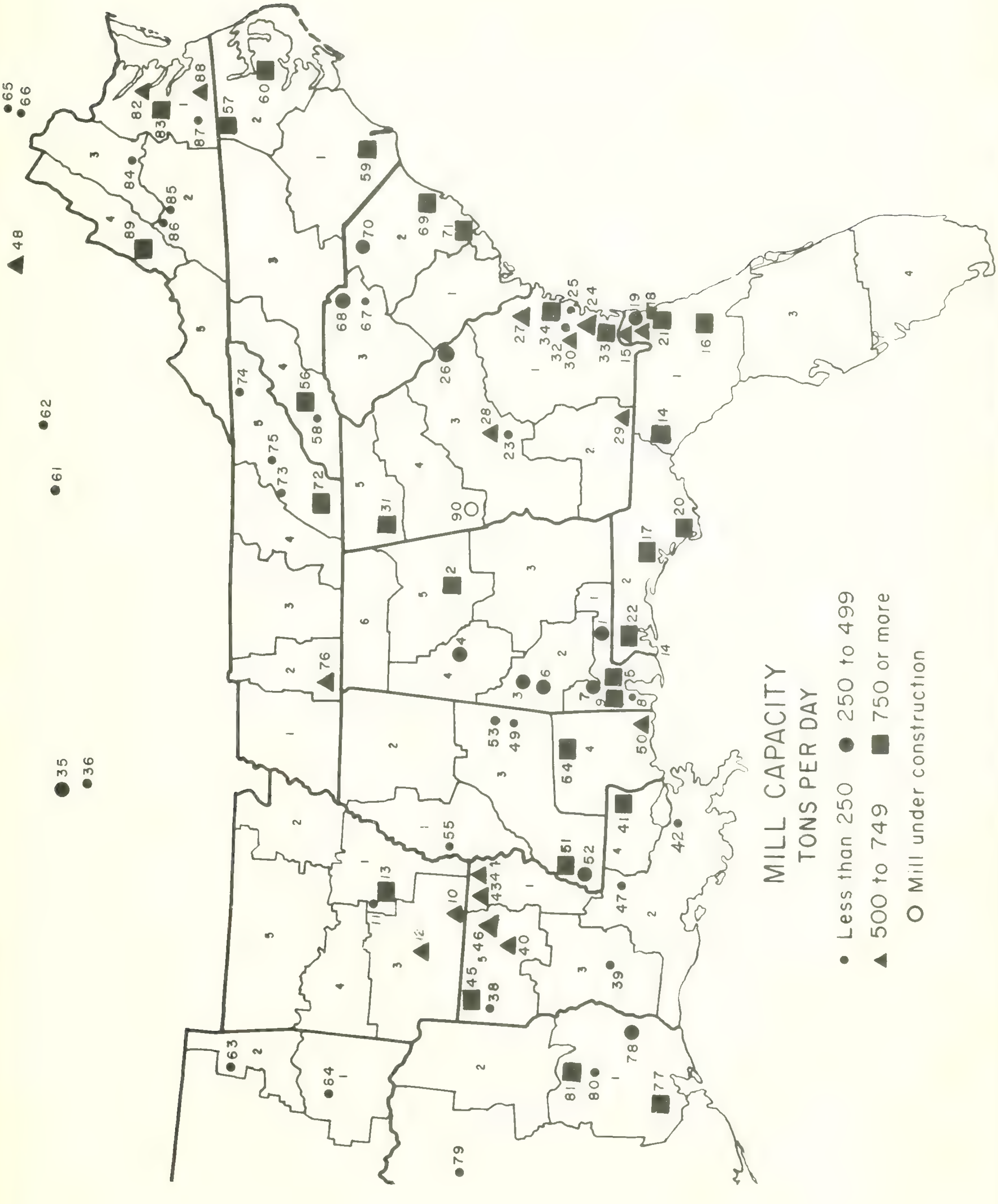


Figure 6. *Mills using southern pulpwood in 1961 and those under construction. Numbered areas are Forest Survey units. Small numbers at mill locations correspond to numbers in table 18.*

DETAILED TABLES

Table 1. *Round pulpwood production in the South, by State and species group, 1961 and 1960*

State	Change from 1960	1961 All species	1961 Pine	1961 Hardwood	1960 All species	1960 Pine	1960 Hardwood
	Percent	*Thousand cords*					
Alabama	+8	2,805.6	2,168.9	636.7	2,593.7	2,016.4	577.3
Arkansas	+2	1,235.8	987.0	248.8	1,216.4	983.2	233.2
Florida	+7	2,058.8	1,954.4	104.4	1,923.9	1,825.2	98.7
Georgia	(1)	4,406.0	3,923.9	482.1	4,410.1	4,004.7	405.4
Louisiana	−1	1,630.3	1,306.2	324.1	1,645.6	1,290.9	354.7
Mississippi	−3	1,718.9	889.4	829.5	1,774.3	956.0	818.3
North Carolina	(1)	1,879.9	1,430.4	449.5	1,887.9	1,486.2	401.7
Oklahoma	−42	22.5	13.3	9.2	38.6	30.1	8.5
South Carolina	+3	1,964.7	1,535.7	429.0	1,901.8	1,515.0	386.8
Tennessee	+14	403.8	214.8	189.0	353.4	188.8	164.6
Texas	(1)	1,130.5	906.9	223.6	1,134.5	916.6	217.9
Virginia	−3	1,662.2	1,190.0	472.2	1,715.3	1,277.8	437.5
All states	+2	20,919.0	16,520.9	4,398.1	20,595.5	16,490.9	4,104.6

[1] Negligible.

Table 2. *Wood residues used for pulp manufacture in the South, by State and species group, 1961 and 1960*

State	Change from 1960	1961 All species	1961 Pine	1961 Hardwood	1960 All species	1960 Pine	1960 Hardwood
	Percent	*Thousand cords*					
Alabama	+16	494.8	395.9	98.9	426.0	354.6	71.4
Arkansas	+20	407.0	385.8	21.2	339.5	329.5	10.0
Florida	+17	206.6	180.9	25.7	176.5	164.0	12.5
Georgia	+10	543.1	463.7	79.4	495.7	439.7	56.0
Louisiana	−2	207.2	182.6	24.6	211.3	182.4	28.9
Mississippi	(1)	199.9	155.9	44.0	199.3	152.7	46.6
North Carolina	+7	412.0	342.0	70.0	385.7	325.0	[2] 60.7
Oklahoma	+23	17.9	17.9	.	14.5	14.5	.
South Carolina	+13	326.0	260.9	65.1	288.6	239.0	49.6
Tennessee	+75	14.7	4.1	10.6	8.4	1.1	7.3
Texas	+7	311.0	288.8	22.2	291.9	276.1	15.8
Virginia	+45	171.5	153.7	17.8	118.1	105.0	13.1
All states	+12	3,311.7	2,832.2	479.5	2,955.5	2,583.6	371.9

[1] Negligible.

[2] Includes 223 cords of hemlock.

Table 3. *Wood residues used for pulp manufacture in the South, by State and type of residue, 1961*

State	All types	Chips All species	Chips Pine	Chips Hardwood	Other residues[1] All species	Other residues[1] Pine	Other residues[1] Hardwood
	Thousand cords						
Alabama	494.8	488.2	394.3	93.9	6.6	1.6	5.0
Arkansas	407.0	396.7	384.5	12.2	10.3	1.3	9.0
Florida	206.6	206.0	180.9	25.1	0.6	.	0.6
Georgia	543.1	525.2	462.3	62.9	17.9	1.4	16.5
Louisiana	207.2	204.7	182.2	22.5	2.5	0.4	2.1
Mississippi	199.9	191.9	154.8	37.1	8.0	1.1	6.9
North Carolina	412.0	396.4	341.5	54.9	15.6	0.5	15.1
Oklahoma	17.9	17.9	17.9	.	.	.	.
South Carolina	326.0	317.9	260.2	57.7	8.1	0.7	7.4
Tennessee	14.7	13.8	4.1	9.7	0.9	.	0.9
Texas	311.0	307.7	287.3	20.4	3.3	1.5	1.8
Virginia	171.5	168.7	153.7	15.0	2.8	.	2.8
All states	3,311.7	3,235.1	2,823.7	411.4	76.6	8.5	68.1

[1] Veneer cores, pole and piling trim, cull crossties, secondary residues.

Table 4. *Southern pulpwood production by State and survey unit, 1961*

Round pulpwood and residues	Survey Unit [1]	All species	Pine	Hardwood
	Number	*Standard cords*		
SOUTH				
Roundwood		20,919,012	16,520,907	4,398,105
Wood residues		3,311,716	2,832,236	479,480
All pulpwood		24,230,728	19,353,143	4,877,585
SOUTHEASTERN STATION				
FLORIDA				
Roundwood	1	1,306,375	1,243,707	62,668
	2	576,217	534,926	41,291
	3	149,503	149,102	401
	4	26,654	26,654	
Total		2,058,749	1,954,389	104,360
Wood residues		206,680	180,974	25,706
All pulpwood		2,265,429	2,135,363	130,066
GEORGIA				
Roundwood	1	1,928,112	1,636,582	291,530
	2	427,546	400,817	26,729
	3	1,300,387	1,203,903	96,484
	4	552,413	510,980	41,433
	5	197,552	171,576	25,976
Total		4,406,010	3,923,858	482,152
Wood residues		543,076	463,663	79,413
All pulpwood		4,949,086	4,387,521	561,565
NORTH CAROLINA				
Roundwood	1	591,762	487,545	104,217
	2	455,278	373,265	82,013
	3	512,863	426,043	86,820
	4	320,022	143,552	176,470
Total		1,879,925	1,430,405	449,520
Wood residues		411,966	342,013	69,953
All pulpwood		2,291,891	1,772,418	519,473
SOUTH CAROLINA				
Roundwood	1	460,963	358,674	102,289
	2	689,317	448,532	240,785
	3	814,463	728,553	85,910
Total		1,964,743	1,535,759	428,984
Wood residues		325,967	260,876	65,091
All pulpwood		2,290,710	1,796,635	494,075
VIRGINIA				
Roundwood	1	598,602	487,926	110,676
	2	508,873	422,615	86,258
	3	258,434	194,302	64,132
	4	244,403	70,619	173,784
	5	51,897	14,559	37,338
Total		1,662,209	1,190,021	472,188
Wood residues		171,491	153,664	17,827
All pulpwood		1,833,700	1,343,685	490,015
SOUTHERN STATION				
ALABAMA				
Roundwood	1	516,168	390,498	125,670
	2	750,969	471,212	279,757
	3	741,282	599,538	141,744
	4	280,925	238,571	42,354
	5	466,537	422,872	43,665
	6	49,718	46,157	3,561
Total		2,805,599	2,168,848	636,751
Wood residues		494,793	395,959	98,834
All pulpwood		3,300,392	2,564,807	735,585
ARKANSAS				
Roundwood	1	66,990	28,006	38,984
	2	8,355	628	7,727
	3	1,016,821	829,537	187,284
	4	114,933	101,985	12,948
	5	28,729	26,888	1,841
Total		1,235,828	987,044	248,784
Wood residues		406,997	385,769	21,228
All pulpwood		1,642,825	1,372,813	270,012
LOUISIANA				
Roundwood	1	118,188	46,639	71,549
	2	19,049	6,649	12,400
	3	341,868	296,437	45,431
	4	229,431	183,410	46,021
	5	921,741	773,087	148,654
Total		1,630,277	1,306,222	324,055
Wood residues		207,199	182,577	24,622
All pulpwood		1,837,476	1,488,799	348,677
MISSISSIPPI				
Roundwood	1	70,235	4,895	65,340
	2	174,687	116,330	58,357
	3	541,499	295,561	245,938
	4	567,138	334,525	232,613
	5	365,337	138,030	227,307
Total		1,718,896	889,341	829,555
Wood residues		199,876	155,906	43,970
All pulpwood		1,918,772	1,045,247	873,525
OKLAHOMA [2]				
Roundwood		22,492	13,317	9,175
Wood residues		17,929	17,929	
All pulpwood		40,421	31,246	9,175
TENNESSEE				
Roundwood	1	26,879	13,796	13,083
	2	10,479	7,953	2,526
	3	262	262	
	4	82,691	40,427	42,264
	5	283,479	152,333	131,146
Total		403,790	214,771	189,019
Wood residues		14,675	4,093	10,582
All pulpwood		418,465	218,864	199,601
TEXAS				
Roundwood	1	723,803	547,307	176,496
	2	384,190	343,815	40,375
	3	22,501	15,810	6,691
Total		1,130,494	906,932	223,562
Wood residues		311,067	288,813	22,254
All pulpwood		1,441,561	1,195,745	245,816

---

[1] For location of survey units, see figures 6 and 7.

[2] All units.

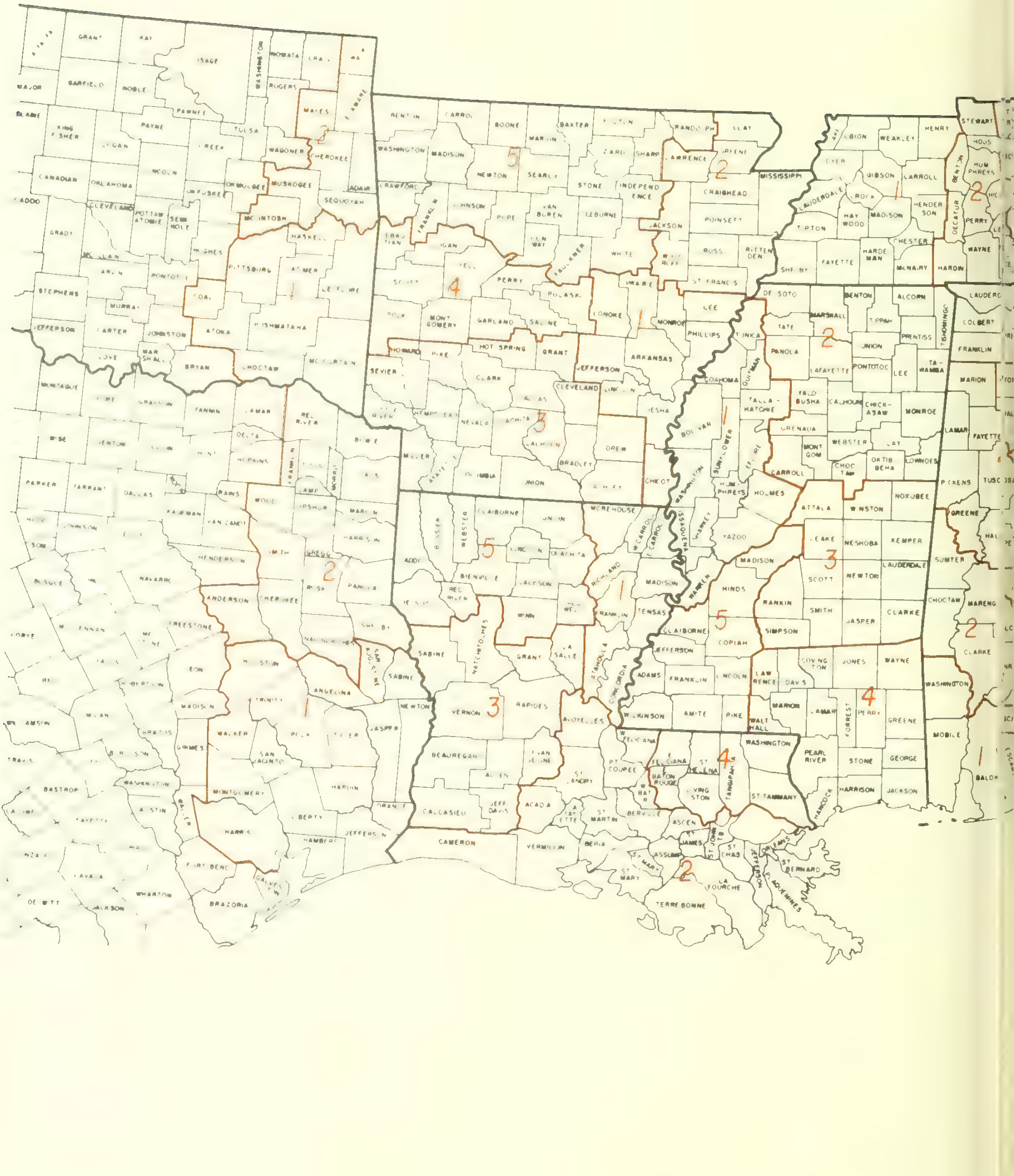
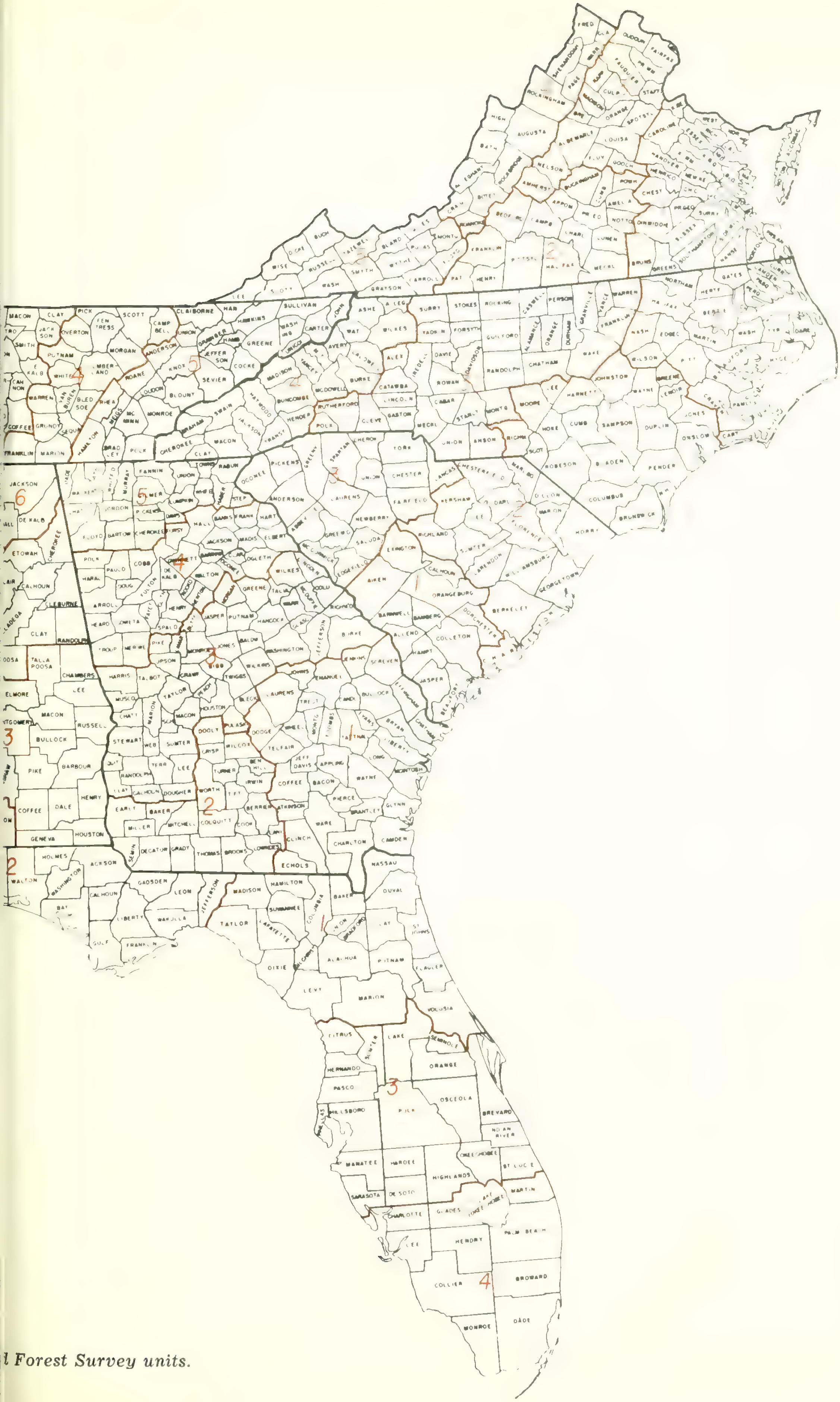


Figure 7. Southern c



l Forest Survey units.

Table 5. *Southern pulpwood production by Experiment Station territory, 1961*

Station and source of wood	All species	Pine	Hardwood
	– – – Standard cords – – –		
Southeastern			
Roundwood	11,971,636	10,034,432	1,937,204
Residues	1,659,180	1,401,190	257,990
Total	13,630,816	11,435,622	2,195,194
Southern			
Roundwood	8,947,376	6,486,475	2,460,901
Residues	1,652,536	1,431,046	221,490
Total	10,599,912	7,917,521	2,682,391
All pulpwood	24,230,728	19,353,143	4,877,585

Table 6. *Round pulpwood production in Alabama, 1961*

County	All species	Pine	Hardwood
	– – – Standard cords – – –		
Autauga	11,371	10,985	386
Baldwin	171,485	123,522	47,963
Barbour	42,864	35,536	7,328
Bibb	40,005	36,320	3,685
Blount	5,034	5,024	10
Bullock	29,366	24,137	5,229
Butler	60,539	43,573	16,966
Calhoun	45,875	41,212	4,663
Chambers	18,694	16,999	1,695
Cherokee	24,267	16,196	8,071
Chilton	19,886	14,651	5,235
Choctaw	152,785	78,056	74,729
Clarke	119,509	71,718	47,791
Clay	39,606	34,084	5,522
Cleburne	37,471	31,853	5,618
Coffee	29,858	24,610	5,248
Colbert	3,605	3,191	414
Conecuh	88,890	71,617	17,273
Coosa	50,284	45,104	5,180
Covington	48,865	44,260	4,605
Crenshaw	31,672	22,428	9,244
Cullman	5,084	5,029	55
Dale	45,991	36,463	9,528
Dallas	21,994	16,996	4,998
De Kalb	12,270	11,022	1,248
Elmore	28,486	28,292	194
Escambia	63,346	51,724	11,622
Etowah	32,366	29,092	3,274
Fayette	25,612	24,956	656
Franklin	11,209	10,065	1,144
Geneva	24,569	22,924	1,645
Greene	24,287	16,413	7,874
Hale	24,227	17,286	6,941
Henry	36,541	31,217	5,324
Houston	20,474	16,268	4,206
Jackson	5,342	5,342	
Jefferson	34,185	33,689	496
Lamar	19,440	18,565	875
Lauderdale	472	347	125
Lawrence	2,051	2,051	
Lee	52,695	45,213	7,482
Limestone	3,487	3,487	
Lowndes	47,895	35,673	12,222
Macon	15,701	15,225	476
Madison	904	820	84
Marengo	86,770	60,267	26,503
Marion	8,194	8,194	
Marshall	8,125	7,986	139
Mobile	127,138	95,860	31,278
Monroe	113,585	84,122	29,463
Montgomery	42,503	28,653	13,850
Morgan	2,253	1,846	407
Perry	27,425	19,468	7,957
Pickens	47,025	36,074	10,951
Pike	48,692	31,798	16,894
Randolph	28,553	27,567	986
Russell	36,791	33,964	2,827
St. Clair	33,433	30,676	2,757
Shelby	48,144	44,856	3,288
Sumter	72,698	39,304	33,394
Talladega	38,482	35,986	2,496
Tallapoosa	74,700	63,933	10,767
Tuscaloosa	64,710	61,295	3,415
Walker	37,850	36,669	1,181
Washington	105,334	75,132	30,202
Wilcox	116,732	66,128	50,604
Winston	5,903	5,835	68
All counties	2,805,599	2,168,848	636,751

able 7. *Round pulpwood production in Arkansas, 1961*

unty	All species	Pine	Hardwood
	Standard cords		
kansas	...	...	...
hley	114,706	87,143	27,563
xter	133	133	
nton	...	...	...
one	...	..	
adley	48,637	41,698	6,939
lhoun	47,045	44,736	2,309
rroll	...	...	...
icot	4,379	15	4,364
ark	64,478	52,164	12,314
ay	..	.	.
eburne	1,289	1,289	
eveland	34,249	27,908	6,341
lumbia	86,746	76,559	10,187
nway	2,669	2,499	170
aighead	588	588	
awford	...	..	
ittenden	4,220		4,220
oss	...		
llas	58,857	48,807	10,050
sha	14,623		14,623
ew	68,038	31,412	36,626
lkner	32	29	3
nklin	241	241	
ton	..	.	
land	20,743	19,259	1,484
nt	99,939	84,348	15,591
eene	40	40	
mpstead	35,617	29,652	5,965
t Spring	36,455	28,717	7,738
ward	15,810	13,839	1,971
ependence	509	509	
rd	.		
kson	..		
ferson	28,848	20,694	8,154
nson	7,158	7,147	11
fayette	32,478	24,001	8,477
wrence	..		
e	1,015		1,015
Lincoln	12,458	7,297	5,161
Little River	10,635	9,999	636
Logan	3,924	3,870	54
Lonoke			
Madison			
Marion			
Miller	35,084	22,206	12,878
Mississippi	3,507		3,507
Monroe			
Montgomery	23,357	21,744	1,613
Nevada	29,963	27,499	2,464
Newton	.		
Ouachita	60,936	51,508	9,428
Perry	15,174	15,174	
Phillips	5,667		5,667
Pike	26,202	22,088	4,114
Poinsett			
Polk	539	539	
Pope	14,097	13,204	893
Prairie			
Pulaski	2,596	2,275	321
Randolph	.		
St. Francis			
Saline	34,479	25,942	8,537
Scott	1,283	1,283	
Searcy			
Sebastian	.		
Sevier	12,755	11,690	1,065
Sharp	.		
Stone	46	46	
Union	98,191	93,563	4,628
Van Buren	89	89	
Washington			
White	2,466	1,702	764
Woodruff			
Yell	12,838	11,899	939
All counties	1,235,828	987,044	248,784

Table 8. *Round pulpwood production in Florida, 1961*

County	All species	Pine	Hardwood
	Standard cords		
Alachua	37,817	37,440	377
Baker	74,954	74,870	84
Bay	36,588	35,207	1,381
Bradford	57,618	57,618	
Brevard	9,464	9,464	
Broward	13	13	
Calhoun	33,933	29,609	4,324
Charlotte	10,437	10,437	
Citrus	3,178	3,178	
Clay	65,922	64,363	1,559
Collier	4,663	4,663	
Columbia	78,363	72,032	6,331
Dade	5,656	5,656	
De Soto	4,745	4,745	
Dixie	47,563	47,215	348
Duval	83,793	82,380	1,413
Escambia	81,607	79,592	2,015
Flagler	64,916	58,487	6,429
Franklin	16,909	16,909	
Gadsden	29,319	26,369	2,950
Gilchrist	8,471	7,084	1,387
Glades	262	262	
Gulf	18,848	18,564	284
Hamilton	97,482	90,352	7,130
Hardee	13,320	13,320	
Hendry	155	155	
Hernando	10,578	10,234	344
Highlands	3,250	3,250	
Hillsborough	14,966	14,966	
Holmes	31,654	27,220	4,434
Indian River			
Jackson	44,739	35,834	8,905
Jefferson	23,794	21,361	2,433
Lafayette	48,205	48,205	
Lake	9,370	9,370	
Lee	5,129	5,129	
Leon	29,211	28,975	236
Levy	32,636	30,500	2,136
Liberty	26,828	24,457	2,371
Madison	41,896	41,863	33
Manatee	1,402	1,402	
Marion	75,799	69,867	5,932
Martin	279	279	
Monroe			
Nassau	106,581	96,799	9,782
Okaloosa	11,688	11,262	426
Okeechobee	1,662	1,662	
Orange	1,759	1,759	
Osceola	25,660	25,623	37
Palm Beach	60	60	
Pasco	4,859	4,859	
Pinellas	167	167	
Polk	33,099	33,099	
Putnam	66,714	55,610	11,104
St. Johns	98,180	97,144	1,036
St. Lucie			
Santa Rosa	86,520	85,194	1,326
Sarasota	2,120	2,120	
Seminole	6,509	6,489	20
Sumter	3,395	3,395	
Suwannee	25,766	18,878	6,888
Taylor	95,756	95,057	699
Union	30,300	30,300	
Volusia	67,643	67,643	
Wakulla	27,331	27,331	
Walton	37,305	33,300	4,005
Washington	39,943	33,742	6,201
All counties	2,058,749	1,954,389	104,360

Table 9. *Round pulpwood production in Georgia, 1961*

County	All species	Pine	Hardwood
	Standard cords		
Appling	80,634	76,565	4,069
Atkinson	57,546	54,343	3,203
Bacon	41,486	39,691	1,795
Baker	7,168	6,858	310
Baldwin	48,208	45,980	2,228
Banks	3,364	3,353	11
Barrow	810	789	21
Bartow	13,131	11,122	2,009
Ben Hill	16,861	15,634	1,227
Berrien	54,956	49,944	5,012
Bibb	8,022	6,796	1,226
Bleckley	9,033	7,200	1,833
Brantley	89,414	78,222	11,192
Brooks	24,643	23,236	1,407
Bryan	65,211	51,908	13,303
Bulloch	41,296	28,309	12,987
Burke	28,695	22,471	6,224
Butts	23,321	22,299	1,022
Calhoun	18,344	16,528	1,816
Camden	146,234	116,613	29,621
Candler	17,815	14,793	3,022
Carroll	26,552	23,424	3,128
Catoosa	4,066	3,891	175
Charlton	78,975	71,311	7,664
Chatham	21,998	11,619	10,379
Cattahoochee	17,565	17,113	452
Chattooga	6,770	6,217	553
Cherokee	20,202	19,576	626
Clarke	1,480	1,480	
Clay	6,792	6,246	546
Clayton	1,417	1,411	6
Clinch	129,621	129,600	21
Cobb	15,051	13,933	1,118
Coffee	63,602	56,339	7,263
Colquitt	28,932	27,329	1,603
Columbia	18,964	15,787	3,177
Cook	16,617	16,567	50
Coweta	18,202	15,715	2,487
Crawford	30,803	27,571	3,232
Crisp	12,050	11,173	877
Dade	343	308	35
Dawson	4,725	4,667	58
Decatur	26,944	25,770	1,174
De Kalb	4,625	4,582	43
Dodge	47,815	42,120	5,695
Dooly	10,579	10,146	433
Dougherty	46,729	46,620	109
Douglas	21,144	17,945	3,199
Early	25,136	22,749	2,387
Echols	80,831	80,831	
Effingham	57,729	43,810	13,919
Elbert	26,173	21,880	4,293
Emanuel	39,430	34,865	4,565
Evans	20,127	15,793	4,334
Fannin	5,391	4,737	654
Fayette	22,942	22,500	442
Floyd	33,290	24,373	8,917
Forsyth	4,643	4,598	45
Franklin	8,032	7,792	240
Fulton	16,701	15,999	702
Gilmer	10,961	10,764	197
Glascock	4,752	4,340	412
Glynn	54,897	43,291	11,606
Gordon	19,296	17,989	1,307
Grady	22,538	19,700	2,838
Greene	48,551	43,633	4,918
Gwinnett	22,841	21,882	959
Habersham	11,474	11,424	50
Hall	18,710	18,642	68
Hancock	29,541	27,646	1,895
Haralson	19,518	17,516	2,002
Harris	44,399	39,673	4,726
Hart	3,859	3,785	74
Heard	10,856	9,747	1,109
Henry	27,519	27,272	247
Houston	17,505	15,969	1,536
Irwin	10,366	9,219	1,147
Jackson	17,065	16,797	268
Jasper	42,752	39,673	3,079
Jeff Davis	44,364	41,106	3,258
Jefferson	30,909	26,606	4,303
Jenkins	13,654	10,458	3,196
Johnson	11,771	10,452	1,319
Jones	72,584	63,339	9,245
Lamar	22,986	22,080	906
Lanier	25,217	24,900	317
Laurens	22,820	17,217	5,603
Lee	4,594	4,594	
Liberty	81,115	43,781	37,334
Lincoln	16,488	14,496	1,992
Long	58,287	41,597	16,690
Lowndes	13,119	12,867	252
Lumpkin	7,354	7,354	
McDuffie	36,596	32,922	3,674
Mc Intosh	35,213	25,945	9,268
Macon	22,927	22,566	361
Madison	5,476	5,444	32
Marion	14,831	14,810	21
Meriwether	49,401	42,652	6,749
Miller	9,279	9,279	
Mitchell	19,436	16,875	2,561
Monroe	53,640	49,119	4,521
Montgomery	24,627	18,257	6,370
Morgan	29,792	27,508	2,284
Murray	7,046	6,455	591
Muscogee	9,607	9,462	145
Newton	25,127	24,646	481
Oconee	17,762	16,584	1,178
Oglethorpe	21,909	21,382	527
Paulding	33,167	25,968	7,199
Peach	10,230	9,877	353
Pickens	7,391	6,744	647
Pierce	57,522	56,283	1,239
Pike	10,104	9,945	159
Polk	17,880	15,316	2,564
Pulaski	5,828	4,990	838
Putnam	32,708	31,338	1,370
Quitman	9,317	8,681	636
Rabun	9,656	1,715	7,941
Randolph	24,255	22,137	2,118
Richmond	17,774	15,933	1,841
Rockdale	1,886	1,886	
Schley	13,057	12,971	86
Screven	25,723	16,765	8,958
Seminole	8,373	7,569	804
Spalding	10,480	9,921	559
Stephens	7,527	7,208	319
Stewart	72,777	71,609	1,168
Sumter	15,470	15,414	56
Talbot	48,826	43,723	5,103
Taliaferro	15,351	12,955	2,396
Tattnall	25,286	18,895	6,391
Taylor	26,300	25,441	859

Table 9. *Round pulpwood production in Georgia, 1961* (Continued)

County	All species	Pine	Hardwood
	– – – Standard cords – – –		
Telfair	61,232	49,058	12,174
Terrell	4,212	4,138	74
Thomas	18,523	17,123	1,400
Tift	17,004	16,533	471
Toombs	27,626	20,637	6,989
Towns	421	421	
Treutlen	15,901	11,249	4,652
Troup	73,189	71,507	1,682
Turner	14,893	14,215	678
Twiggs	33,130	31,402	1,728
Union	1,441	1,300	141
Upson	49,586	46,363	3,223
Walker	10,619	9,810	809
Walton	4,632	4,632	
Ware	129,241	126,418	2,823
Warren	23,266	21,556	1,710
Washington	31,972	29,985	1,987
Wayne	116,503	104,137	12,366
Webster	6,594	6,591	3
Wheeler	42,566	34,304	8,262
White	3,256	3,252	4
Whitfield	13,192	12,249	943
Wilcox	26,437	24,883	1,554
Wilkes	37,570	36,220	1,350
Wilkinson	53,130	49,587	3,543
Worth	18,475	18,248	227
All counties	4,406,010	3,923,858	482,152

Table 10. *Round pulpwood production in Louisiana, 1961*

Parish	All species	Pine	Hardwood
	– – – Standard cords – – –		
Acadia	3,828	3,729	99
Allen	31,814	28,505	3,309
Ascension			
Assumption			
Avoyelles	1,972	1,892	80
Beauregard	23,046	20,508	2,538
Bienville	109,624	93,212	16,412
Bossier	64,478	50,570	13,908
Caddo	23,603	13,385	10,218
Calcasieu	12,824	11,346	1,478
Caldwell	30,736	28,300	2,436
Cameron			
Catahoula	15,594	8,890	6,704
Claiborne	88,074	83,085	4,989
Concordia	12,186		12,186
De Soto	55,098	45,325	9,773
East Baton Rouge	3,323	585	2,738
East Carroll	3,169	101	3,068
East Feliciana	17,613	9,508	8,105
Evangeline	6,444	6,243	201
Franklin	1,374	1,107	267
Grant	28,624	24,550	4,074
Iberia			
Iberville	8		8
Jackson	90,724	75,786	14,938
Jefferson			
Jefferson Davis	1,679	1,407	272
Lafayette			
Lafourche			
La Salle	42,556	35,487	7,069
Lincoln	59,893	53,152	6,741
Livingston	66,337	57,653	8,684
Madison	3,044		3,044
Morehouse	65,359	36,515	28,844
Natchitoches	53,011	42,305	10,706
Orleans			
Ouachita	32,264	24,062	8,202
Plaquemines			
Pointe Coupee	1,707		1,707
Rapides	61,718	47,483	14,235
Red River	22,008	17,783	4,225
Richland	716	26	690
Sabine	59,080	58,652	428
St. Bernard			
St. Charles			
St. Helena	17,515	10,542	6,973
St. James			
St. John the Baptist			
St. Landry	389	78	311
St. Martin	1,124		1,124
St. Mary			
St. Tammany	20,721	18,997	1,724
Tangipahoa	36,776	28,287	8,489
Tensas	15,897		15,897
Terrebonne			
Union	167,383	136,897	30,486
Vermilion			
Vernon	21,072	19,951	1,121
Washington	67,146	57,838	9,308
Webster	53,798	40,853	12,945
West Baton Rouge	1,671		1,671
West Carroll	849		849
West Feliciana	8,350	950	7,400
Winn	124,058	110,677	13,381
All parishes	1,630,277	1,306,222	324,055

Table 11. *Round pulpwood production in Mississippi, 1961*

County	All species	Pine	Hardwood
	Standard cords		
Adams	29,913	4,155	25,758
Alcorn	6,627	5,591	1,036
Amite	35,978	15,626	20,352
Attala	25,336	10,777	14,559
Benton	2,012	1,352	660
Bolivar	6,097		6,097
Calhoun	1,292	102	1,190
Carroll	9,923	1,151	8,772
Chickasaw	7,451	7,247	204
Choctaw	14,276	4,396	9,880
Claiborne	39,769	6,689	33,080
Clarke	94,922	52,980	41,942
Clay	2,407	2,131	276
Coahoma	192		192
Copiah	39,607	15,412	24,195
Covington	33,403	12,357	21,046
De Soto			
Forrest	20,893	13,055	7,838
Franklin	52,119	32,446	19,673
George	36,920	22,941	13,979
Greene	63,042	39,196	23,846
Grenada	6,566	2,228	4,338
Hancock	48,856	40,860	7,996
Harrison	25,928	23,246	2,682
Hinds	27,194	6,320	20,874
Holmes	16,558	3,649	12,909
Humphreys	1,408		1,408
Issaquena	6,187		6,187
Itawamba	5,881	5,128	753
Jackson	57,915	48,723	9,192
Jasper	60,912	30,690	30,222
Jefferson	37,700	12,792	24,908
Jefferson Davis	7,283	3,576	3,707
Jones	51,424	17,398	34,026
Kemper	33,014	22,965	10,049
Lafayette	10,744	9,217	1,527
Lamar	20,965	9,294	11,671
Lauderdale	53,046	33,709	19,337
Lawrence	26,775	12,399	14,376
Leake	33,859	15,201	18,658
Lee	1,931	1,931	
Leflore	593	2	591
Lincoln	42,258	23,322	18,936
Lowndes	4,074	3,953	121
Madison	11,579	5,640	5,939
Marion	30,019	8,353	21,666
Marshall	9,121	5,912	3,209
Monroe	9,227	9,227	
Montgomery	5,080	1,235	3,845
Neshoba	28,634	13,298	15,336
Newton	33,293	20,266	13,027
Noxubee	13,748	13,493	255
Oktibbeha	5,848	2,992	2,856
Panola	2,410		2,410
Pearl River	30,403	15,625	14,778
Perry	22,770	15,537	7,233
Pike	19,747	7,614	12,133
Pontotoc	4,130	4,130	
Prentiss	8,728	6,744	1,984
Quitman	2	2	
Rankin	40,342	18,193	22,149
Scott	32,782	21,566	11,216
Sharkey	3,821		3,821
Simpson	32,792	16,008	16,784
Smith	24,002	10,770	13,232
Stone	27,028	18,748	8,280
Sunflower	541		541
Tallahatchie	2,161	50	2,111
Tate			
Tippah	10,342	9,272	1,070
Tishomingo	13,661	11,429	2,232
Tunica	283		283
Union	3,813	3,784	29
Walthall	14,139	3,531	10,608
Warren	25,509	899	24,610
Washington	2,388		2,388
Wayne	49,375	29,686	19,689
Webster	20,632	12,297	8,335
Wilkinson	29,473	8,014	21,459
Winston	34,817	15,645	19,172
Yalobusha	8,511	4,881	3,630
Yazoo	4,495	293	4,202
All counties	1,718,896	889,341	829,555

Table 12. *Round pulpwood production in North Carolina, 1961*

County	All species	Pine	Hardwood
	Standard cords		
Alamance	3,762	3,249	513
Alexander	5,075	5,075	
Alleghany			..
Anson	48,757	31,926	16,831
Ashe			
Avery	858	5	853
Beaufort	48,988	37,557	11,431
Bertie	25,115	22,172	2,943
Bladen	70,978	45,481	25,497
Brunswick	68,066	62,327	5,739
Buncombe	54,876	18,086	36,790
Burke	29,261	21,508	7,753
Cabarrus	10,634	9,246	1,388
Caldwell	17,804	15,796	2,008
Camden	2,412	1,796	616
Carteret	37,569	37,429	140
Caswell	1,820	1,818	2
Catawba	3,055	3,055	
Chatham	42,363	30,176	12,187
Cherokee	41,912	31,182	10,730
Chowan	7,732	4,183	3,549
Clay			
Cleveland	12,345	11,962	383
Columbus	62,606	47,686	14,920
Craven	46,751	40,230	6,521
Cumberland	19,657	17,214	2,443
Currituck	3,833	3,384	449
Dare	7	7	
Davidson	2,291	2,291	
Davie	3,929	3,814	115
Duplin	42,739	39,173	3,566
Durham	14,773	14,745	28
Edgecombe	8,892	8,401	491
Forsyth	6,780	6,725	55
Franklin	46,724	39,612	7,112
Gaston	15,361	11,902	3,459
Gates	34,109	19,675	14,434
Graham	4,138	1,098	3,040
Granville	12,354	11,668	686
Greene	1,033	850	183
Guilford	20,731	19,886	845
Halifax	31,653	31,157	496
Harnett	12,570	10,675	1,895
Haywood	13,115	2,936	10,179
Henderson	27,741	8,663	19,078
Hertford	29,383	19,066	10,317
Hoke	8,980	8,638	342
Hyde	22,477	21,477	1,000
Iredell	27,482	19,235	8,247
Jackson	50,469	8,692	41,777
Johnston	7,746	6,349	1,397
Jones	29,700	28,979	721
Lee	13,361	9,075	4,286
Lenoir	11,659	11,637	22
Lincoln	3,658	3,023	635
Mc Dowell	22,438	12,928	9,510
Macon	15,216	4,701	10,515
Madison	7,044	4,383	2,661
Martin	23,810	18,432	5,378
Mecklenburg	17,826	14,830	2,996
Mitchell	1,649	31	1,618
Montgomery	16,958	16,520	438
Moore	19,079	16,998	2,081
Nash	10,460	9,701	759
New Hanover	6,879	6,661	218
Northampton	18,495	17,109	1,386
Onslow	65,669	59,731	5,938
Orange	8,602	7,773	829
Pamlico	13,460	12,153	1,307
Pasquotank	4,020	3,598	422
Pender	51,830	39,510	12,320
Perquimans	3,300	3,000	300
Person	7,849	7,849	
Pitt	21,997	17,931	4,066
Polk	14,302	5,719	8,583
Randolph	3,957	3,515	442
Richmond	23,120	15,701	7,419
Robeson	29,012	21,768	7,244
Rockingham	10,625	10,625	
Rowan	5,389	4,967	422
Rutherford	21,700	14,548	7,152
Sampson	34,031	27,748	6,283
Scotland	2,440	1,249	1,191
Stanly	14,227	13,762	465
Stokes	2,279	2,279	
Surry	8,527	8,527	...
Swain	7,612	4,020	3,592
Transylvania	19,662	4,442	15,220
Tyrrell	34,036	27,430	6,606
Union	26,449	19,620	6,829
Vance	8,480	7,963	517
Wake	38,834	34,549	4,285
Warren	23,238	21,862	1,376
Washington	7,990	2,101	5,889
Watauga	38		38
Wayne	10,607	10,095	512
Wilkes	5,081	5,081	
Wilson	18,789	15,276	3,513
Yadkin	1,727	1,727	..
Yancey	1,108		1,108
All counties	1,879,925	1,430,405	449,520

Table 13. *Round pulpwood production in Oklahoma, 1961*

County [1]	All species	Pine	Hardwood
	– – – Standard cords – – –		
Cherokee	3,308		3,308
Delaware	2,599		2,599
Le Flore	724	724	
McCurtain	11,658	11,644	14
Mayes	1,627		1,627
Pushmataha	949	949	
Rogers	1,627		1,627
All counties	22,492	13,317	9,175

[1] Counties with no pulpwood production are omitted.

Table 14. *Round pulpwood production in South Carolina, 1961*

County	All species	Pine	Hardwood
	– – – Standard cords – – –		
Abbeville	41,020	38,941	2,079
Aiken	36,008	29,173	6,835
Allendale	33,107	25,735	7,372
Anderson	27,432	25,807	1,625
Bamberg	31,743	24,317	7,426
Barnwell	19,175	14,712	4,463
Beaufort	19,517	11,803	7,714
Berkeley	65,763	50,880	14,883
Calhoun	8,630	7,132	1,498
Charleston	64,291	43,198	21,093
Cherokee	13,569	13,495	74
Chester	73,619	62,328	11,291
Chesterfield	47,481	19,911	27,570
Clarendon	27,108	21,064	6,044
Colleton	88,866	71,853	17,013
Darlington	21,514	12,606	8,908
Dillon	15,436	9,097	6,339
Dorchester	66,979	53,721	13,258
Edgefield	55,765	48,482	7,283
Fairfield	139,326	126,936	12,390
Florence	36,676	21,839	14,837
Georgetown	59,676	39,990	19,686
Greenville	20,542	20,283	259
Greenwood	44,524	40,689	3,835
Hampton	50,514	38,229	12,285
Horry	35,883	26,240	9,643
Jasper	51,201	35,380	15,821
Kershaw	104,065	77,815	26,250
Lancaster	58,784	46,480	12,304
Laurens	50,891	46,553	4,338
Lee	17,778	6,961	10,817
Lexington	27,061	23,506	3,555
Mc Cormick	26,087	24,692	1,395
Marion	22,436	9,997	12,439
Marlboro	17,168	8,772	8,396
Newberry	79,681	72,923	6,758
Oconee	25,835	22,015	3,820
Orangeburg	28,162	23,113	5,049
Pickens	6,546	6,087	459
Richland	62,801	46,229	16,572
Saluda	22,100	19,591	2,509
Spartanburg	32,894	28,810	4,084
Sumter	22,347	15,784	6,563
Union	49,667	47,570	2,097
Williamsburg	68,894	38,149	30,745
York	46,181	36,871	9,310
All counties	1,964,743	1,535,759	428,984

Table 15. *Round pulpwood production in Tennessee, 1961*

County	All species	Pine	Hardwood
	Standard cords		
Anderson	10,201	6,312	3,889
Bedford			
Benton	2,240	1,864	376
Bledsoe	4,140	2,452	1,688
Blount	13,265	8,180	5,085
Bradley	12,169	8,076	4,093
Campbell	5,849	5,644	205
Cannon			
Carroll	872	243	629
Carter	6,635		6,635
Cheatham			
Chester	1,072	582	490
Claiborne	1,909	1,710	199
Clay			
Cocke	15,697	11,829	3,868
Coffee			
Crockett			
Cumberland	17,388	5,520	11,868
Davidson			
Decatur	2,965	2,138	827
De Kalb			
Dickson	238	238	
Dyer	600		600
Fayette	45	45	
Fentress	7,119	5,773	1,346
Franklin			...
Gibson	19	19	
Giles			
Grainger	3,649	2,872	777
Greene	12,068	5,560	6,508
Grundy	2,464	2,464	
Hamblen	491	292	199
Hamilton	8,477	6,767	1,710
Hancock	461		461
Hardeman	2,416	1,635	781
Hardin	4,608	3,695	913
Hawkins	15,356	5,455	9,901
Haywood			...
Henderson	7,529	6,133	1,396
Henry	997	855	142
Hickman			
Houston			
Humphreys			...
Jackson			
Jefferson	529	100	429
Johnson	6,174		6,174
Knox	11,417	5,752	5,665
Lake			
Lauderdale	1,541		1,541
Lawrence	15		15
Lewis	182	160	22
Lincoln			
Loudon	2,738	1,077	1,661
McMinn	27,404	16,984	10,420
McNairy	4,239	3,347	892
Macon			
Madison	839	611	228
Marion	2,301	2,267	34
Marshall	7	7	
Maury			
Meigs	11,540	6,881	4,659
Monroe	34,548	24,945	9,603
Montgomery	17	17	
Moore			
Morgan	26,220	6,417	19,803
Obion	600		600
Overton	1,126	1,109	17
Perry	313		313
Pickett			
Polk	17,565	13,249	4,316
Putnam	518	518	
Rhea	15,020	4,050	10,970
Roane	6,673	2,727	3,946
Robertson			
Rutherford			
Scott	10,476	6,292	4,184
Sequatchie	1,097	1,097	
Sevier	6,313	4,052	2,261
Shelby	3,311	1	3,310
Smith			
Stewart			
Sullivan	13,227	1,733	11,494
Sumner			
Tipton	2,474		2,474
Trousdale			
Unicoi	6,035		6,035
Union	9,097	6,020	3,077
Van Buren	153	153	
Warren	460	460	
Washington	14,821	7,710	7,111
Wayne	156	96	60
Weakley	325	325	
White	3,380	261	3,119
Williamson			
Wilson			
All counties	403,790	214,771	189,019

Table 16. *Round pulpwood production in Texas, 1961*

County [1]	All species	Pine	Hardwood
	– – – Standard cords – – –		
Anderson	14,537	12,085	2,452
Angelina	49,064	47,072	1,992
Austin	137		137
Bowie	13,055	11,112	1,943
Brazos	1,008		1,008
Camp	2,388	2,322	66
Cass	33,043	32,330	713
Chambers	2,816	2,406	410
Cherokee	44,470	41,565	2,905
Falls	157		157
Fort Bend	584		584
Franklin	286	286	
Gregg	9,122	7,399	1,723
Grimes	15,438	13,413	2,025
Hardin	37,822	29,140	8,682
Harris	29,151	22,141	7,010
Harrison	34,599	30,437	4,162
Henderson	21		21
Houston	43,048	36,352	6,696
Jasper	74,182	54,828	19,354
Jefferson	530	95	435
Leon	3,539	2,155	1,384
Liberty	44,429	28,677	15,752
McLennan	368		368
Marion	21,572	17,458	4,114
Montgomery	64,392	44,821	19,571
Morris	4,265	4,225	40
Nacogdoches	51,759	49,793	1,966
Newton	58,060	36,873	21,187
Orange	8,580	5,076	3,504
Panola	46,962	41,440	5,522
Polk	73,481	57,012	16,469
Red River	896	896	
Rusk	19,780	17,200	2,580
Sabine	39,907	33,226	6,681
San Augustine	49,807	38,819	10,988
San Jacinto	18,151	12,071	6,080
Shelby	53,956	44,315	9,641
Smith	7,785	5,330	2,455
Titus	114	114	
Trinity	42,301	38,195	4,106
Tyler	54,484	34,546	19,938
Upshur	25,494	25,401	93
Walker	33,598	25,957	7,641
Waller	1,249	242	1,007
Wood	107	107	
All counties	1,130,494	906,932	223,562

[1] Counties with no pulpwood production are omitted.

Table 17. *Round pulpwood production in Virginia, 1961*

County [1]	All species	Pine	Hardwood
	Standard cords		
Accomack	4,392	4,392	
Albemarle	29,316	28,121	1,195
Alleghany	49,537	8,176	41,361
Amelia	20,093	18,123	1,970
Amherst	64,723	23,954	40,769
Appomattox	45,507	27,496	18,011
Arlington	5	5	
Augusta	21,580	8,905	12,675
Bath	41,153	3,827	37,326
Bedford	55,611	40,534	15,077
Bland	96	31	65
Botetourt	25,816	9,233	16,583
Brunswick	65,356	52,715	12,641
Buchanan		...	
Buckingham	62,971	34,656	28,315
Campbell	52,311	44,892	7,419
Caroline	27,742	27,537	205
Carroll	1,743	1,743	
Charles City	16,275	12,492	3,783
Charlotte	28,417	26,228	2,189
Chesterfield	28,123	24,427	3,696
Clarke	1,177	1,052	125
Craig	18,074	3,331	14,743
Culpeper	7,033	6,300	733
Cumberland	16,058	15,523	535
Dickenson	280		280
Dinwiddie	52,709	39,942	12,767
Elizabeth City	99	99	
Essex	8,102	8,073	29
Fairfax	4,811	4,811	
Fauquier	2,917	2,917	
Floyd	1,038	1,038	
Fluvanna	18,521	13,627	4,894
Franklin	24,502	24,290	212
Frederick	8,226	6,913	1,313
Giles	6	6	
Gloucester	14,921	13,868	1,053
Goochland	19,617	19,518	99
Grayson	2	2	
Greene	4,469	4,469	
Greensville	36,470	29,480	6,990
Halifax	28,432	27,838	594
Hanover	12,325	11,944	381
Henrico	8,934	8,139	795
Henry	19,992	19,847	145
Highland	13,204	656	12,548
Isle of Wight	15,298	8,459	6,839
James City	9,512	8,138	1,374
King and Queen	26,340	24,720	1,620
King George	22	22	
King William	18,070	15,034	3,036
Lancaster	17,669	17,669	
Lee	5,515	2	5,513
Loudoun	3	3	
Louisa	12,490	11,873	617
Lunenburg	12,967	11,628	1,339
Madison	5,576	5,576	
Mathews	3,137	2,638	499
Mecklenburg	30,604	28,957	1,647
Middlesex	11,991	11,530	461
Montgomery	3,210	3,210	
Nansemond	19,281	10,994	8,287
Nelson	28,013	15,936	12,077
New Kent	24,645	20,319	4,326
Norfolk	422	370	52
Northampton	233	108	125
Northumberland	4,685	4,685	...
Nottoway	23,220	19,251	3,969
Orange	9,459	8,836	623
Page	801	762	39
Patrick	6,424	6,424	...
Pittsylvania	39,725	38,287	1,438
Powhatan	15,949	13,772	2,177
Prince Edward	26,090	24,869	1,221
Prince George	30,821	22,850	7,971
Prince William	17,971	17,675	296
Princess Anne	...	...	...
Pulaski	165	165	...
Rappahannock	59	59	...
Richmond	17,433	17,433	...
Roanoke	3,041	2,883	158
Rockbridge	43,146	9,068	34,078
Rockingham	6,654	5,939	715
Russell	1,077	...	1,077
Scott	16,024		16,024
Shenandoah	8,639	7,170	1,469
Smyth	3	3	...
Southampton	37,403	22,646	14,757
Spotsylvania	19,229	16,439	2,790
Stafford	14,222	14,183	39
Surry	20,022	14,102	5,920
Sussex	45,508	33,754	11,754
Tazewell	...	...	...
Warren	3,355	2,704	651
Warwick	648	583	65
Washington	7,020	2,675	4,345
Westmoreland	11,702	11,702	...
Wise	10,114	80	10,034
Wythe	5,604	5,604	...
York	8,312	7,062	1,250
All counties	1,662,209	1,190,021	472,188

[1] Includes independent cities.

Table 18. *Mills using southern pulpwood in 1961, by process and capacity* [1]

Location	Map code [2]	Company	Pulp capacity, 24 hours [3]: All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
			Tons				
ALABAMA							
Brewton	(1)	Container Corp. of America	300	300			
Coosa Pines	(2)	Coosa River Newsprint Co.	960	320	640		
Demopolis	(3)	Gulf States Paper Corp.	400	400			
Tuscaloosa	(4)	Gulf States Paper Corp.	400	400			
Mobile	(5)	International Paper Co.	1,315	1,015	300		
Naheola	(6)	Marathon Southern Corp.	420	420			
Mobile	(7)	National Gypsum Co.	300		150	150	
Mobile	(8)	The Ruberoid Co.	48	..	48		
Mobile	(9)	Scott Paper Co.	830	830			
		Total	4,973	3,685	1,138	150	
ARKANSAS							
Crossett	(10)	Crossett Paper Mills	655	575		80	
Pine Bluff	(11)	Dierks Paper Co.	150	150			
Camden	(12)	International Paper Co.	625	625			
Pine Bluff	(13)	International Paper Co.	1,145	745	400		
		Total	2,575	2,095	400	80	
FLORIDA							
Foley	(14)	The Buckeye Cellulose Corp.	880	880			
Fernandina	(15)	Container Corp. of America	650	650			
Palatka	(16)	Hudson Pulp and Paper Corp.	850	850			
Panama City	(17)	International Paper Co.	1,620	1,620			
Jacksonville	(18)	Owens-Illinois Glass Co.	500	500			
Fernandina	(19)	Rayonier, Inc.	350				350
Port St. Joe	(20)	St. Joe Paper Co.	1,200	1,200			
Jacksonville	(21)	St. Regis Paper Co.	1,500	1,500			
Pensacola	(22)	St. Regis Paper Co.	750	750			
		Total	8,300	7,950			350
GEORGIA							
Macon	(23)	Armstrong Cork Co.	200		200		
Brunswick	(24)	Brunswick Pulp and Paper Co.	550	550			
Savannah	(25)	Certain-teed Products Corp.	65		65		
Augusta	(26)	Continental Can Co.	475	350		125	
Savannah	(27)	Continental Can Co.	600	600			
Macon	(28)	Georgia Kraft Co.	675	675			
Valdosta	(29)	Owens-Illinois Glass Co.	630	630			
Jesup	(30)	Rayonier, Inc.	675	675			
Rome	(31)	Rome Kraft Co.	1,300	1,300			
Savannah	(32)	The Ruberoid Co.	48		48		...
St. Marys	(33)	St. Marys Kraft Corp.	900	900			
Savannah	(34)	Union Bag-Camp Paper Corp.	2,575	2,175		400	
		Total	8,693	7,855	313	525	
ILLINOIS							
Alton	(35)	Alton Box Board Co.	250			250	
East St. Louis	(36)	Certain-teed Products Corp.	85		85		
Wilmington	(37)	Lehon Co.	60			60	
		Total	395		85	310	
LOUISIANA							
Shreveport	(38)	Bird and Son	60			60	
Elizabeth	(39)	Calcasieu Paper Co.	240	240			
Hodge	(40)	Continental Can Co., Inc.	640	500		140	
Bogalusa	(41)	Crown Zellerbach Corp.	1,175	1,040		135	
New Orleans	(42)	Flintcote Co.	60		60		
Bastrop	(43)	International Paper Co. (Bastrop Mill)	590	..		590	
Bastrop	(44)	International Paper Co. (Louisiana Mill)	635	590	45		
Springhill	(45)	International Paper Co.	1,550	1,550			
West Monroe	(46)	Olin Mathieson Chemical Corp.	650	650			
St. Francisville	(47)	St. Francisville Paper Co.	235		235		
		Total	5,835	4,570	340	925	
MARYLAND							
Luke	(48)	West Virginia Pulp and Paper Co.	600	600			
		Total	600	600			

Table 18. *Mills using southern pulpwood in 1961, by process and capacity*[1] (Continued)

Location	Map code[2]	Company	Pulp capacity, 24 hours[3] All processes	Sulfate	Groundwood and other mechanical	Semi-chemical	Soda and sulfite
			- - - - - - - - - *Tons*	- - - - - - - - -			
MISSISSIPPI							
Meridian	(49)	Flintkote Co.	133		133		
Moss Point	(50)	International Paper Co.	660	660	...		
Natchez	(51)	International Paper Co.	925	925		...	...
Natchez	(52)	Johns-Manville Products Corp.	350		230	120	
Meridian	(53)	Kroehler Mfg. Co. of Miss., Inc.[4]	80		80		...
Laurel	(54)	Masonite Corp.	800		800		...
Greenville	(55)	United States Gypsum Co.	180	...	180		
		Total	3,128	1,585	1,423	120	...
NORTH CAROLINA							
Canton	(56)	Champion Papers, Inc.	980	930		50	...
Roanoke Rapids	(57)	Halifax Paper Co.	800	800		...	...
Sylva	(58)	The Mead Corp.	225	...		225	...
Acme	(59)	Riegel Paper Corp.	775	645		130	...
Plymouth	(60)	Weyerhaeuser Co., N. C. Div.	1,450	1,125		325	
		Total	4,230	3,500		730	...
OHIO							
Cincinnati	(61)	Philip Carey Mfg. Co.	200	...	200		...
Chillicothe	(62)	The Mead Corp.	210	...	...	...	210
		Total	410	...	200		210
OKLAHOMA							
Pryor	(63)	Bestwall Gypsum Co.	90			90	...
Haileyville	(64)	Dierks Forests, Inc.	50		50		
		Total	140	...	50	90	...
PENNSYLVANIA							
York	(65)	Certain-teed Products Corp.	70	...		70	
Spring Grove	(66)	P. H. Glatfelter Co.	190	190		...	...
		Total	260	190		70	...
SOUTH CAROLINA							
Catawba	(67)	Bowater Board Co.	200	...	200		
Catawba	(68)	Bowaters Carolina Corp.	400	400			
Georgetown	(69)	International Paper Co.	1,990	1,455		535	...
Hartsville	(70)	Sonoco Products Co.	375	...		375	...
Charleston	(71)	West Virginia Pulp and Paper Co.	1,550	1,290		260	
		Total	4,515	3,145	200	1,170	...
TENNESSEE							
Calhoun	(72)	Bowaters Southern Paper Corp.	1,425	450	800	175	...
Harriman	(73)	The Mead Corp.	112	...		112	
Kingsport	(74)	The Mead Corp.	225	...		...	225
Knoxville	(75)	Southern Extract Co.	150	...	...	150	...
Counce	(76)	Tennessee River Pulp & Paper Co.	500	500			...
		Total	2,412	950	800	437	225
TEXAS							
Pasadena	(77)	Champion Papers, Inc.	750	690	60		...
Evadale	(78)	East Texas Pulp and Paper Co.	425	425			...
Dallas	(79)	The Ruberoid Co.	40	...	40		...
Diboll	(80)	Southern Pine Lumber Co.	130			130	...
Lufkin	(81)	Southland Paper Mills	1,250	400	850		
		Total	2,595	1,515	950	130	
VIRGINIA							
West Point	(82)	The Chesapeake Corp. of Virginia	675	675		...	...
Hopewell	(83)	Continental Can Co., Inc.	850	700	...	150	...
Columbia	(84)	James River Pulp Corp.	25	...	25	...	...
Lynchburg	(85)	The Mead Corp.	175	...	...	175	...
Big Island	(86)	Owens-Illinois Glass Co.	235	...		235	...
Jarratt	(87)	Southern Johns-Manville Products Corp.	200	...	200	...	...
Franklin	(88)	Union Bag-Camp Paper Co.	600	600	...	...	...
Covington	(89)	West Virginia Pulp and Paper Co.	1,000	800		200	
		Total	3,760	2,775	225	760	...
		All states	52,821	40,415	6,124	5,497	785

---

[1] In 1961 one mill was under construction in the South, the Great Southern Land and Paper Co. at Cedar Springs, Georgia (90), with a design capacity of 700 tons per day.

[2] Corresponds to numbers at mill locations in figure 6.

[3] Southern Pulp and Paper Manufacturer, vol. 24, no. 10 (Oct. 1, 1961); and other sources.

[4] Operate exclusively on secondary wood residues.

Growth Through Agricultural Progress

FOREST SURVEY RELEASE 59

UTHEASTERN FOREST EXPERIMENT STATION
Asheville, North Carolina

Forest Service, U. S. Department of Agriculture

1962